

American Artisan

Founded 1880

The Warm Air Heating
and Sheet Metal Journal

Vol. 97, No. 11

CHICAGO, MARCH 16, 1929

\$2.00 Per Year

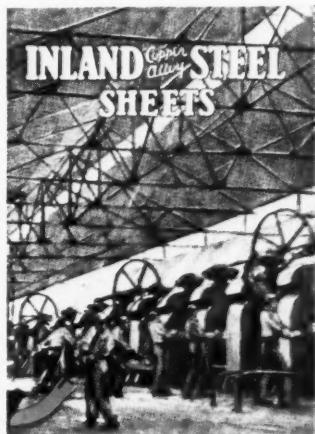
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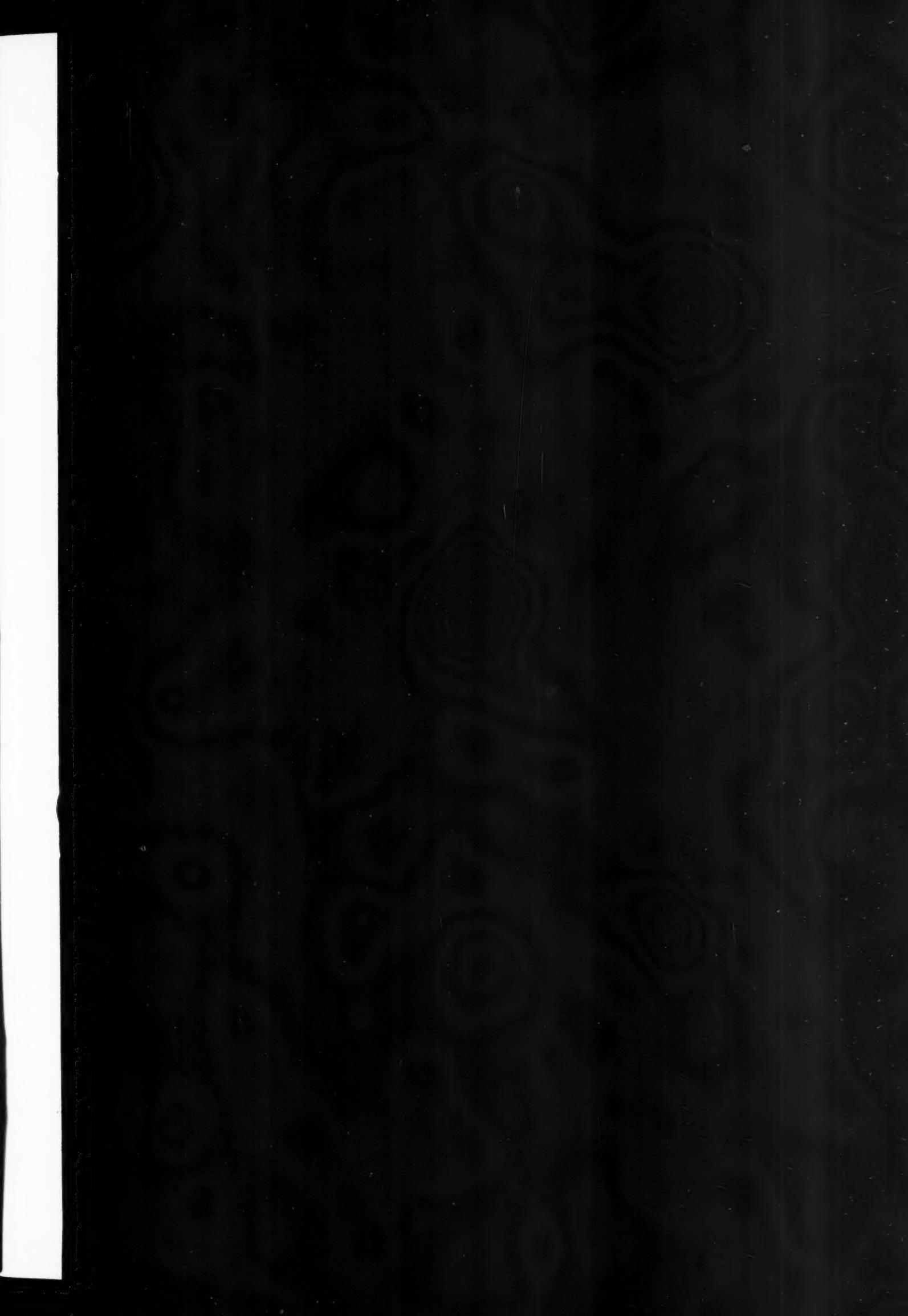
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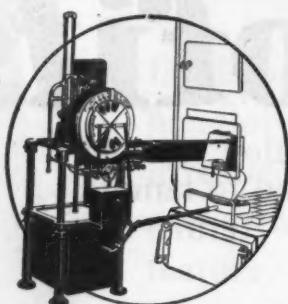
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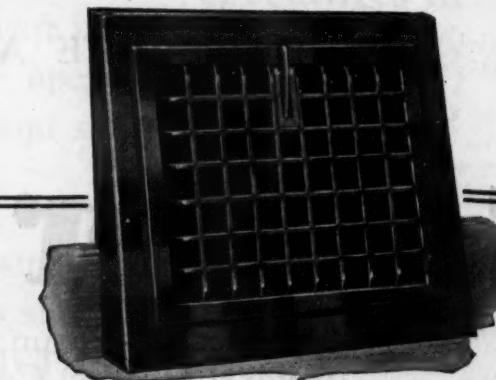
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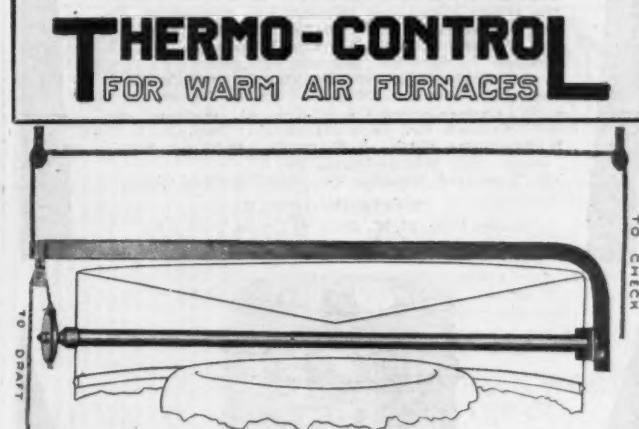
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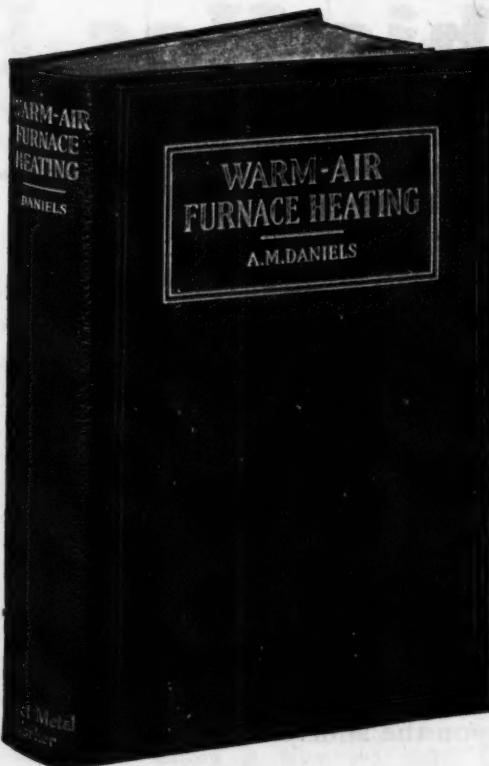
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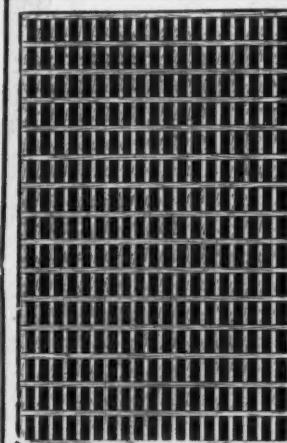
NO doubt you've had some experience handling Oil Burners for your Warm Air Furnace installations. Folks want Oil Burners, but you've probably had some difficulty finding the right Oil Burner.

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Brookside Park CLEVELAND, OHIO

Published to Promote
Better
Warm Air Heating
and
Sheet Metal Work

American Artisan

The Warm Air Heating and Sheet Metal Journal

Founded 1880

Yearly Subscription
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United States.....\$2.00
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MAN CAN DO NO MORE

Whenever I have found out that I have blundered, or that my work has been imperfect, and when I have been contemptuously criticized, and even when I have been so overpraised that I have been mortified, it has been my greatest comfort to say over and over to myself that, "I have worked as hard as I could, and no one can do more than this."—DARWIN.

ROBINSON

Heat Distributor

THE only thing a furnace fan can do is force the warm air through the pipes, distributing it to the various rooms.

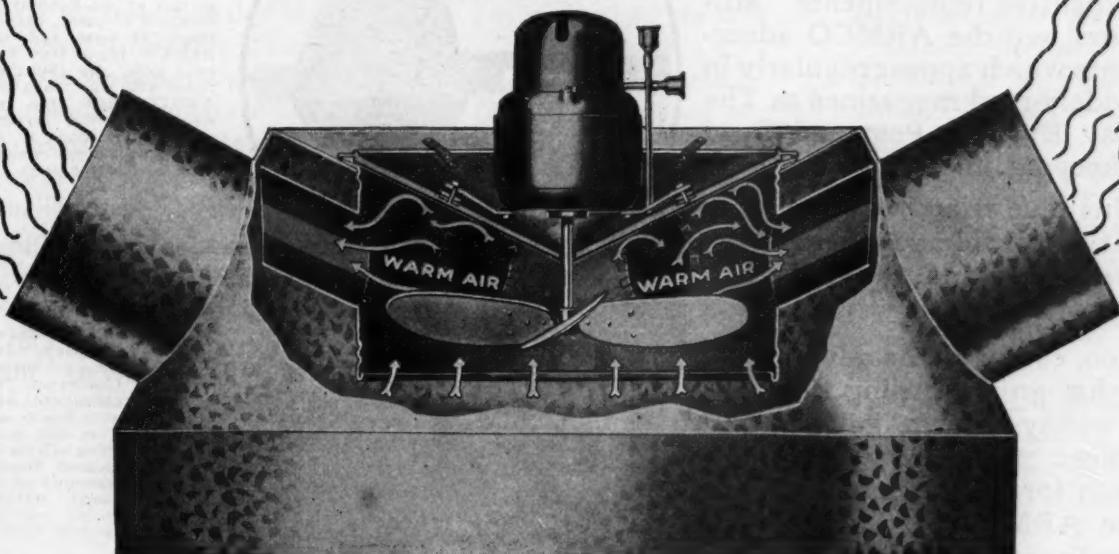
This provides quicker heating, economy of fuel and better heating results of course, but the big job of the furnace fan is to **FORCE THE WARM AIR**. In practically every installation one or more rooms need favoring.

The ROBINSON Heat Distributor is the **ONLY FAN THAT DISTRIBUTES THE HEAT WHERE YOU WANT IT TO GO and IN THE DESIRED AMOUNT**.

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Why do so many use it?

WHY do more than seven thousand sheet metal contractors use and recommend ARMCO Ingots?

Just consider these things:

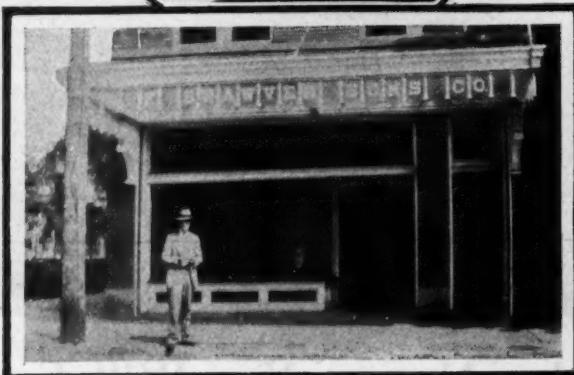
ARMCO Ingots are a business-getter. People know it, have confidence in its ability to last and fore-stall expensive replacements. Millions, too, see the ARMCO advertisements which appear regularly in such widely-read magazines as The Saturday Evening Post and Good Housekeeping.

And this blue triangulated iron does last. It's workable, too; being uniformly pure and ductile it speeds up the job.

You, too, can have the advantages that go with using this most widely known galvanized sheet. Ask any of our salesmen for further information on ARMCO Ingots and the Ingots Iron Shop plan. Or, write us direct.



The result of an experiment by Mr. August Michel, Ingots Iron Shop Contractor of Springfield, Ohio. In 1913, when installing gutters at the Robbins and Myers Company's plant, he used one length of steel and one length ARMCO Ingots both of the same gage. By 1918 the steel had failed and was taken down. The ARMCO Ingots Iron section was still sound and serviceable five years later when it was taken down during some remodeling. The picture tells the story.



W. F. Shawver Sons Company, Ingots Iron Shop contractors of Charleston, West Virginia, use ARMCO Ingots Iron exclusively. They find it pays satisfying dividends, in increased business and lessening of shop overhead.

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Executive Offices, Middletown, Ohio



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American Artisan

The Warm Air Heating
and Sheet Metal Journal



Vol. 97

CHICAGO, MARCH 16, 1929

No. 11

Can National Warm Air Heating Association Eliminate Unfair Trade Practices?

One Furnace Dealer Thinks Manufacturers Need "Jacking Up" on Several Scores

By AN OBSERVER

A SHORT time ago at a meeting of fertilizer men, the attendance of which represented 75 per cent of the fertilizer industry, resolutions were adopted designed to do away with unfair trade practices in the fertilizer industry.

The resolutions as adopted were published in *Printers' Ink* under date of February 7, 1929. They were read with considerable interest by a warm air furnace dealer who is of the opinion that there is a big need for the National Warm Air Heating Association to take similar action to correct some of the unfair trade practices of warm air furnace manufacturers.

We will first publish the resolutions as they were adopted by the fertilizer industry and as they appeared in *Printers' Ink*, following them with "An Observer's" letter.

Rule 1. Sales below cost. The sale or consignment of goods below cost for the purpose and with the intent of disturbing markets and of injuring a competitor and with the effect of lessening competition is an unfair trade practice. Cost should be determined in accordance with sound accounting methods.

Rule 2. Rebates. The granting of secret rebates, irrespective of the form they may assume, constitute unfair trade practices. Among the practices that violate this principle, which are unfair trade practices, are the following:

(a) Billing of goods at prices which do not reflect actual return to the seller or consignor.

(b) Providing truck service without adequate charge for it, or reimbursing the dealer, purchaser, consignee or agent for the cost of trucking if reimbursement is not provided for in the manufacturer's price list.

(c) Selling or consigning chemicals and/or materials with special concessions or at reduced prices, given to induce the buyer or consignee to purchase mixed fertilizer and/or other fertilizer materials.

(d) Failure to enforce in good faith the terms of contracts previ-

ously made for the sale of fertilizer; for example:

(1) Selling on terms that require the payment of sight draft on presentation of bill of lading (S. D. B. L.) and then waiving the obligation to pay cash before documents of goods are delivered, thus deferring

Warm air furnace dealers throughout the country have been led to believe that the National Warm Air Heating Association is going to do a lot toward making the business better for everyone in the industry.

When a warm air furnace dealer is following progress in other lines as closely as is indicated by the accompanying letter, it is a pretty good indication that he has given conditions in his own industry a pretty thorough sizing up and is beginning to wonder whether or not furnace manufacturers are only kidding themselves and everybody else in making some of the statements they do.

Actions speak louder than words.—The Editor.

ring the payment of the cash to some future date.

(2) Selling and delivering goods on time, consignment or open bill of lading terms on S. D. B. L. prices, or waiving earned interest.

(e) Furnishing special containers, preparing special formulas for individual buyers or consignees or using special ingredients in standard formulas without making adequate charge for the cost of such containers, formulas or special ingredients, as an inducement to the making of a contract and/or sale.

(f) Making special allowances to buyers or consignees under the guise of advertising expense, or giving any other form of gratuity.

(g) Adopting selling methods that promote secret rebates and concessions, such as—

(1) Employing a buyer or consignee or his agent or anyone employed by or connected with a buyer or consignee with the purpose, design and effect of influencing the business of such customer.

(2) Carrying on books by seller or consignor, as delinquent, balances due by solvent customer, with no intention of requiring ultimate payment, either of principal or interest in whole or in part.

(h) Enabling the purchaser or consignee to obtain fertilizer apparently on cash terms but in fact on credit extended to him by or through the manufacturer, as, for example: A transaction covered by a sight draft and bill of lading under which the purchaser or consignee is made to appear as honoring documents upon presentation by payment with his own funds, when in fact the cash involved was obtained in whole or in part upon a negotiable instrument (usually discounted at a bank) bearing the endorsement of the manufacturer; or a transaction by which the manufacturer, although he does not actually indorse the obligation, renders himself legally or morally responsible for its payment if the purchaser or consignee should fail to meet his obligation to the bank at maturity.

(i) Refunding or rebating to the buyer or consignee, either directly or indirectly, any part of the purchase price on account of goods accepted and/or settled for by the buyer or consignee under the terms of the contracts. This practice is commonly referred to as "retroactive settlement."

Rule 3. Defamation of Competitor or Disparagement of his Goods. The defamation of a competitor in any manner, either by imputing to him dishonorable conduct, inability to perform contracts or questionable credit standing, or the false disparagement of the grade or quality of his goods, is an unfair trade practice.

The following is "An Observer's" letter containing his reactions to the set of resolutions and their need and possible application to the warm air heating industry:

"I am attaching to this letter a page torn from the February 7th issue of *Printers' Ink* which will call your attention to the fact that the Fertilizer Industry has had a meeting under the auspices of the Federal Trade Commission and the following resolutions submitted to

that body for examination and approval.

"Of the resolutions as quoted I call your particular attention to the following rules for the Fertilizer Industry which the furnace industry is guilty of violating:

"Rule 1, regarding selling below cost. There is plenty of evidence of this, to judge from some of the prices that are being quoted today.

"Rule 2, regarding rebates, has been violated generally and particularly under sections a, b, c, and d. Also section 2, under article d—sections e, f, g, and item 1 under clause g. There has also been evidence of retroactive settlement, as outlined in clause i of rule 2.

"Rule 3 has been busted wide open so often that it has gotten to be accepted practice apparently in the industry.

"I have read in your excellent

paper many comments of what the National Warm Air Heating Association was going to do about the conditions in the furnace industry, but so far I have seen little to warrant believing that any action was being taken.

"It should be apparent to any manufacturer, dealer or salesman that the source of most of the evil of the warm air heating industry lies in the manufacturers' hands, and it's about time that the National Warm Air Heating Association started to clean things up at the source, rather than razzing us dealers about conditions over which we have no control.

"Why don't you go after them and show them this call to duty? Either do something or quit spending money and accomplishing nothing. This is a worthy work needing attention."

larly suited for efficient and economical service under northwest climatic conditions—with common northwest fuels. Although that statement is propaganda, we believe its truth has been demonstrated."

Mr. Rosebraugh explained that the association of manufacturers has been working for some time on plans to place a "stamp of approval" on its members' furnaces, stoves, heaters and ranges which meet a rigid standard of quality.

"The engineering board presented recommendations at the Salem meeting," said a local manufacturer, "which will be gone over thoroughly by the members before approval is given any product. We hope this may serve as further protection to the public."

W. H. Carsten of Seattle, new president of Northwest Furnace Builders and president of Majestic Furnace & Manufacturing Company, presided for the first time at Friday's meeting. Ralph T. Montag of Portland, the association's new vice president and president of Montag Stove Works, also attended the Salem meeting.

Eastman Bros., Inc., of Silverton, were represented by L. C. Eastman, A. R. Eastman and George Queseth. D. S. Robinson of Western Furnaces, Inc., Tacoma, retiring president of Northwest Furnace Builders, was present.

Washington Stove Works, Inc., of Everett, Washington, sent Earle M. Mackey to the meeting. Alex S. Scales and C. B. McClellan of Volume Heating & Engineering Co., Inc., Portland, attended. J. B. Stokes of Northwest Stove Works, Inc., Portland, was there.

Arcweld Manufacturing Co., Inc., of Seattle, sent A. F. Nelson to the meeting. Theodore M. Eggers of Pacific Stove & Foundry Company, and Glenwood E. Archer of Archer Engineering Corporation, Seattle, attended, as did George F. Gehri of Gabriel Tubular Furnace Company, Tacoma. The F. S. Lang Manufacturing Company, Seattle, were represented.

Two other Salem manufacturers,
(Continued on next page)

Northwest Furnace Builders Hold Annual Meeting at Salem, Oregon

More Than 100 Dealers from California to Canadian Line Attend

REPRESENTATIVES of 12 or more of the leading furnace and stove manufacturing establishments of Oregon and Washington were in Salem, Oregon, Friday, March 8, for the meeting of Northwest Furnace Builders. The W. W. Rosebraugh Company, Salem, was host to the delegates. In addition to the manufacturers more than 100 dealers—from northern California to the Canadian line—had been invited.

The periodic business meeting of Northwest Furnace Builders followed an inspection of the W. W. Rosebraugh plant Friday afternoon by those attending. In the evening the delegates gathered at the Marion hotel for a dinner and general get-together.

The Salem meeting was the first to which a general invitation had been issued to dealers in the Pacific northwest who handle northwest-made furnaces, stoves, heaters and ranges. The manufacturers issued

the invitation in the belief that an open discussion of problems would be of benefit to both themselves and their dealers.

Inspection of the Rosebraugh plant was in keeping with the general program of Northwest Furnace Builders to maintain a strictly "open door" policy within the industry, thus enabling an exchange of ideas and trade practices.

"There are tricks in every trade," said Mr. Rosebraugh, "but this organization aims to make all the tricks benefit all the members. This enables us constantly to enhance the quality of northwest-made furnaces, stoves, heaters and ranges.

"Another aim of Northwest Furnace Builders is to give service to the public in the form of information on the operation and installation of warm air heating plants, no matter what the make.

"Of course, all of us maintain that warm air heating systems made in the northwest are particu-

Is Salesman Compensated for Hours He Spends Helping Dealers?

One Man Thinks Computing Salesman's Earnings on Castings Sold Not Fair

THE average salesman's idea of proper and adequate compensation would probably be a salary at least as large as that of the President, with a large expense account, and a bonus sufficiently large to enable him to buy a new fine car each year.

He will not willingly accept a commission contract, nor do I think he would be wrong in insisting that the semi-monthly or weekly checks for compensation be termed salary payments instead of drawing account remittances.

There are, of course, no salesmen so dense as to imagine the factory could keep on paying them regardless of the volume of business turned in, but there is somewhere between the job on straight salary regardless of results and the commission job depending entirely on results a happy mean that should be attained, with eminent satisfaction to each side.

The salesman representing a line of good furnaces is not up to his job unless he be a better heating man than any of his customers. He should have all the technic required of a first-class heating man and should have an experience so wide that it embraced every probable problem his customer will have to contend with. The bright young man whose entire knowledge of heating is contained in a handbook or in the Standard Code pamphlet has really no place on the pay roll of a manufacturer who really cares what happens to his furnaces.

The requisite knowledge is not gained in a day or a year. It is a matter of long, patient years of struggling with new and strange problems in a work that has more such problems than any other two industries. Ask any installer. The salesman who has survived this

struggle is a valuable man to the factory. He is as valuable as any executive. *His remuneration should be just as sure.*

Computing the salesman's earn-

There are a lot of other men who have some good ideas on this subject of remunerating salesmen. Let's air them and see whether or not the salesman is being dealt with in a fair way by manufacturers and dealers alike.

This article contains much food for thought, both for the manufacturer and the salesman himself. Read it over and study it thoroughly. It is written by a furnace man having a great deal of experience in the handling of salesmen who is in a position to view both sides of the question.

ings entirely on the number of car-loads of castings sold is not fair to him. If he is the right sort, he has spent dozens of hours—of days—helping the dealer to lay out and sell heating plants that would function properly. He has spent similar periods showing dealers how to correct trouble. He gets no credit for this time. He gets no pay for the knowledge that enables him to do these things. And yet with the right dealer it is altogether probable that a single correction will in time mean more profit to the factory than the sale of a carload of furnaces.

In every business of any magnitude or any history there are certain intangible things considered as assets, and in some instances these have appeared on the list of assets. The good that may be done by the right minded and the rightly trained salesman, entirely aside from the

dollars and cents results attained, is hard to estimate, yet it is there, and it in time becomes a part of those intangible assets which mean so much to the company.

Why should not the salesman be paid for the skill, the knowledge, the experience that enable him to do these things, as well as for the number of furnaces he sells? Let somebody think that over a little bit.

Not many salesmen have any hope, very few have any chance of ever becoming anything but salesmen. Only a favored few have that peculiar equipment which qualifies them for executive positions.

But there is no reason why his remuneration should not be of such a character as to give him the idea that he really belongs to the firm. A straight commission obligates a salesman to nothing, not even to loyalty. He is just as surely separated from the firm as though he were a broker. And the sales manager or other executive who does not take cognizance of this fact is simply overlooking a bet, and he is perhaps not overly supplied with knowledge of human nature.

That is enough. If there is in this outburst some ground for argument, if some debatable question is brought out, then I have served my purpose. I am not inclined to controversy, but simply want to see the salesman get his just due.

NORTHWEST FURNACE BUILDER

(Concluded from Page 100)

F. H. Berger and Nelson Bros., had representatives at the meeting. Representatives of the Oregon and Washington manufacturers' associations were present. Oregon and Washington members of Northwest Furnace Builders are affiliated with these two associations, respectively.

Developing a Pattern for a Funneled Hopper, Pail or Bucket

Pattern Developed in Response to Inquiry from Beardstown, Ill.

By O. W. KOTHE, St. Louis Technical Institute

RESPONDING to the inquiry of a subscriber from Beardstown, Ill., for a pail with a snout, I will say the accompanying drawing will give the solution nicely. The general design can be made at pleasure as effecting size and shape. The curved line, a-e-f-8 of elevation can also be made as shown, or made straight.

So first draw the base line of elevation, and the center vertical line, and then fill in the outline of side elevation. Next describe section "A" for the round end of hopper, and divide in any number of equal spaces, and square lines back to the base 1-13. Also square out the line 8-8' and making it equal to the half diameter of Plan as indicated by line 8 of the lower half. Then describe the arc, 8'-14 of elevation to a uniform curvature as shown by section "F." Treat this section in say three equal spaces and square lines back to the shield line 8-14. These become the half diameter lines as indicated in Plan.

It is also possible to first develop the Plan view, and drop the points 8 and 14 from elevation into Plan, and then sketch the Plan line 8-14, and then see that the elevation and Plan lines correspond in length. After this develop the part plan "B" for the hopper end, and draw triangular lines in both Plan and elevation as shown. Number all points and bends. Now the hopper end must be developed by triangulation, while the back end can be developed by the sweep method if desired, or by triangulation. In this case we use the sweep method.

In the lower portion of the hopper, we use the Plan base lines in the diagram "G" as the base of triangles, and the altitudinal points as the rises, as 1-3—5-7-8, which gives

us the true lengths. For the upper portion of hopper we can do the same; but in this case we work from the elevation, deducting the length of the sectional lines xx be-

With these we describe arcs 3 and 4. Pick true length, 3-3 from diagram "G," and using point 2 as center, cross arcs as at 3. Now pick true length 3-4 from "G," and using the new point 3 as center, cross arcs at 4. Next describe the girth arcs 5 and 6, and then cross these arcs with true lengths 5-5, and 5-6. Continue in this way until the points 7-8 are established. Now observe that the large triangle falls on points 7-8-8 of elevation and so we pick the line 8-9 from "G" and using 8 in pattern as center, strike arc as at 8'. Next pick true length 7-8 from diagram "H," and using 7 in pattern as center, cross arcs as in point 8'. From here on we use the girth from section "F" for the large end of hopper, and those spaces from "A," and continue the development until points 13-14 are established.

After this the back end can be added by the sweep method, the same as we show, which gives the pattern. In practice the seams would be made along the sides so the back end would be developed in one piece. Edges for seaming and wiring must be allowed extra.

Pattern for Making Metal Table Tops Paves Way for More Business

With women of today demanding that their kitchens be outfitted with such equipment as will make cleanliness and efficiency in working possible, the sheet metal contractor with an eye to more business is earning extra profits easily.

A table top that is easy to keep clean and still retains its attractive surface and utility is rather hard to find, unless looked for in the sheet metal field.

It is claimed by the manufactur-

ARE YOU OUT AFTER SPRING BUSINESS?

People living in practically all of the middle western states have experienced an unusually hard winter. A great deal of sub-zero weather has been their lot, followed by melting of the snow which fell in great quantities and freezing again.

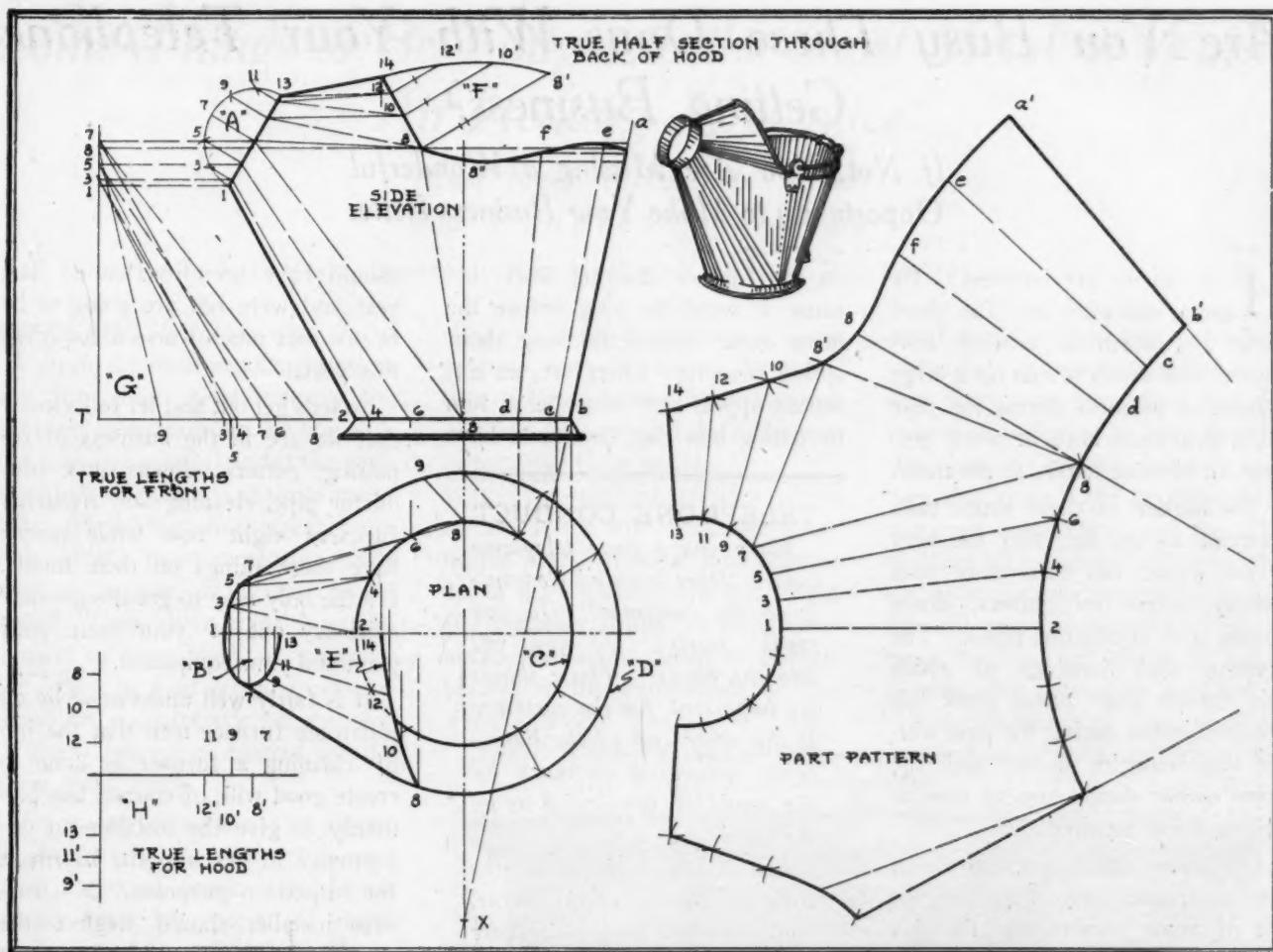
This weather has undoubtedly been very hard on the eaves trough, conductor pipe and down spouting.

A special letter calling attention to the need for repairs on the outside sheet metal work is being used at the present time by progressive sheet metal contractors to produce business of this kind in large volume.

Then, too, in a short time furnace fires will be allowed to go out and the furnace installer should lose no time in getting after people for the cleaning and rehabilitating of their heating plants while the matter is still fresh in their minds.

tween "A" and "F," which gives us the offset for the lines in diagram "H." The base lines are picked from elevation, so that we do not need the Plan at all, if we would wish to work the lower portion of hopper in the same way.

To set out the pattern, we start with line 1-2 of elevation and then use the girth spaces from section "A" and the bottom section of Plan.



Patterns for Funneled Hopper Pail

ers that Monel metal, an alloy of large nickel content and copper, makes an unusually attractive and serviceable table top.

It is either of bright or satiny white finish, and being of the same color and composition throughout, it always presents the same clean appearance, regardless of wear.

The makers state that Monel

metal will not rust, chip or crack.

Much of the national advertising being done by the International Nickel Company is directing the housewife to the sheet metal contractor for Monel metal table tops and to aid the contractor still further, they are glad to furnish a blueprint showing the best method of making Monel metal table tops.

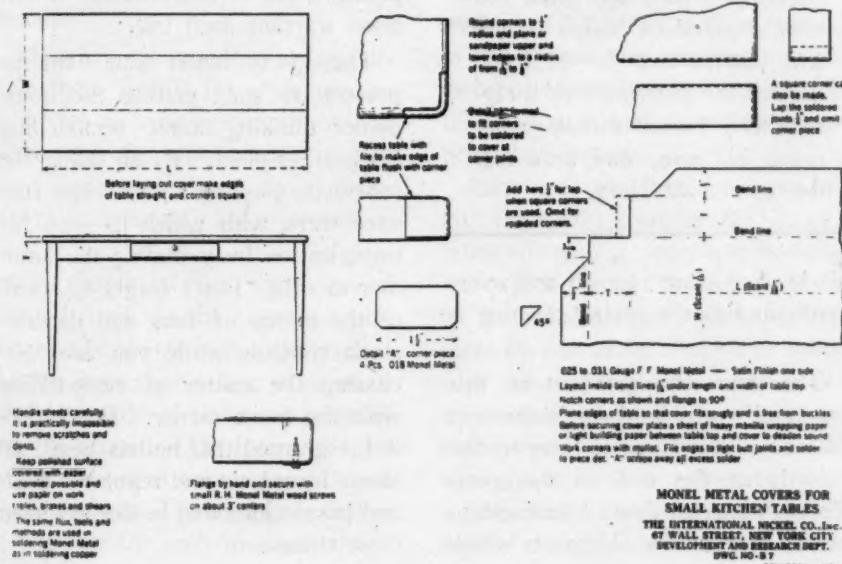
Sheet metal contractors desiring more information and blueprint, as illustrated, should write to The International Nickel Company, Inc., 67 Wall Street, New York City, mentioning AMERICAN ARTISAN.

Rockford Sheet Steel Company to Job Sheet Metal at Rockford, Ill.

The Rockford Sheet Steel Company, Inc., has been established at 121 Loomis Street, Rockford, Illinois, by Paul J. Fischbeck, President, and G. E. Jeanmairet, Secretary and Treasurer.

Wade Furnace Co. Wants Catalogs on New and Used Machinery

The Wade Furnace Company, 622 Broadway, Cincinnati, Ohio, is entering upon the manufacture of furnace fittings and are very interested in receiving catalogs on new and used machinery and tools for this purpose.



PRINTED IN U.S.A.

Are You Busy These Days With Your Telephone Getting Business?

If Not, You Are Missing a Wonderful Opportunity to Make Your Business Better

HOW do we get business? By going out after it. The sheet metal and warm air heating contractor who wants to run up a large volume of business during the year 1929 is already hard at work getting out circular letters to his trade.

The burden of these letters calls attention to the fact that the very severe winter has been more than usually severe on gutters, down spouts and conductor pipes. The freezing and thawings to which this outside sheet metal work has been subjected during the past winter has wrought havoc, and the home owner should lose no time in getting these repaired.

One sheet metal contractor sent out a circular letter to a selected list of home owners and the day after the letter was received by the said home owners this contractor sat down to his telephone and called every one who had received a letter from him up by telephone, apprising them of the fact that he had sent them a letter and asking whether or not there was any repair work of the nature described in the letter to be taken care of.

At the completion of this mailing for sheet metal work, the contractor should lose no time in getting out another letter calling attention to the fact that the fires in the warm air heating plants will soon be allowed to go out. That is an excellent opportunity to get the furnace repaired and cleaned out so that it will be ready for the fall firing again. By so doing the contractor gets an opportunity to get a line on a lot of furnace work which can be done during the summer months which he would not get at all, or at least until the fall rush sets in again, and then the chances are that he would lose a great deal of it because of the rush.

Now is a good time to get busy

on the furnace cleaning work, because it won't be long before the home owner will be thinking about spring cleaning. Therefore, an excellent appeal can be made to him by telling him that he should have

should have been overhauled last year and were not are going to be in just that much worse a condition this year.

So let's get out and let folks know that we are in the business of repairing gutters, downspouts, conductor pipe, cleaning and repairing furnaces right now while people have these things on their minds. It's the only way to get the greatest efficiency out of your men, your plant and your equipment.

It is fairly well understood by all warm air furnace men that the job of cleaning a furnace is done to create good will, of course, but primarily to give the installer an opportunity to get into the basement for inspection purposes. No furnace installer should neglect the opportunity to sell the home owner on the idea of remodelling his warm air heating plant in the event that it is found to be not in accordance with the Standard Furnace Code.

There are too many furnace installers who do not take advantage of their opportunities to get more business for themselves by showing the home owner how the efficiency of his heating plant can be increased materially by remodelling it and applying a fan to it where the conditions warrant such use.

There is no better time than the present to start getting the home owner thinking about remodelling his heating plant. By so doing the contractor lines up a lot of nice furnace work with which to keep his organization busy during the summer months. Don't forget to speak of the merits of fans and thermostatic controls while you are discussing the matter of remodelling with the home owner. Don't take it for granted that he has heard all about forced air and regulated heat, and has decided that he doesn't need those things.

TELEPHONE CONDUCT

Have you a good telephone voice? Does it sound pleasantly to the customer? Do you speak clearly? Do you yell into the phone? Those things are important, for the customer at the other end of the line is being influenced as much by the sound of your voice as by the words you say.

Listen while others in the store are talking at the phone. Note whether their voices are agreeable or disagreeable as they go into the phone. Then check up and improve your own telephone voice. Make it sound business-like but pleasant. The customer you are phoning to cannot see you smile. The voice must do it all.

If you have any doubts about the value some business men place on the telephone as a business producer just hark back a few days ago when you read about the Chicago lawyer who started suit for \$250,000 against the publishers of a certain well known directory because his name had been left out of the directory.

his heating plant cleaned and overhauled before the spring cleaning is done.

The man who gets out at this time and works hard for business is the one who is going to hang up the records at the end of the year. There is a great deal of business to be had at this time. Furnaces which

Some Things to Be Taught to the Sheet Metal or Warm Air Heating Apprentice

*Must Keep Abreast of Times
and Progress in Industry*

By L. F. HYATT, Instructor in Sheet Metal Work, McKinley High School, Canton, Ohio

TO THOSE of us who are to train the sheet metal apprentices for the sheet metal industry the problem of acquainting the boy with the uses and possibilities of the various kinds of metals is at times somewhat perplexing; this is especially true of the more expensive kinds such as copper, brass and monel metal. These three kinds especially cannot be overlooked in planning the course as their growing uses demand an acquaintance on the part of every apprentice trained for the sheet metal trade.

Of recent years the use of copper in the making of store fronts and other types of work, which must endure for a long period of years, has increased its use greatly.

Monel metal has become one of the leading metals for interior work, such as kitchen table tops, kitchen utensils, draining board covers, and countless other uses which will add decidedly to the possibility of a constantly increasing volume of business for any progressive shop. The same is true of brass and its various uses. The boys must learn something about the handling and durability as well as the cost of these metals.

Most schools cannot afford to furnish these metals for class use, so it is "up to" the instructor to find some way by which each student may learn something about them. There is invariably some student in each group who can afford to purchase the metal for some special project, such as the aquarium and flower box shown in the illustration. At the same time a few more small projects made of the same material may be started. The interest of the entire class is at once centered upon these projects. The instructor makes it possible for each member of the

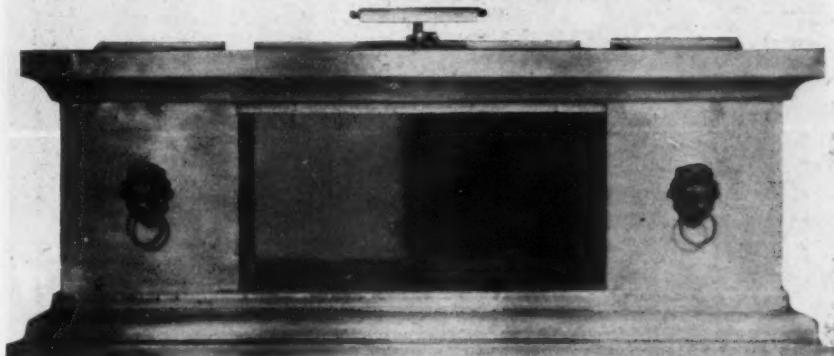
class to assist in the making of these projects, each day calling the attention of the class to the development of these projects and the difference in handling these metals.

It is the early impressions which endure. If the wife or mother sends us for a box of soda, nine chances out of ten we will return with "Arm and Hammer Brand" or some other brand which was called to our attention at the impressionable age when a child.

If there is any sure way of bringing

installations of furnaces according to the code by persons building their own home who learned of the existence of such a code from boys in the class. Certainly these young men should learn the importance of a correct installation, and the man building his own home will not quibble about the extra cost if he knows he will pay the extra cost many times over in coal bills if he has a heating plant incorrectly installed.

Another thing of importance to apprentices, is to teach them the



Metal Flower Box Made by Student at McKinley High School, Canton, Ohio

ing the sheet metal industry up to the place where it rightfully belongs, it is by pointing out to these young men the possibilities and correct method of using the various metals, in order that they may have satisfied customers and a finished job that will give service which is entirely satisfactory.

Each year we discuss the Standard Code and consider the importance of such a code, not because we expect the boy to use the code in its present form, perhaps, for there may be many changes in it before these young men enter industry, but if they follow the sheet metal trade the code will serve as their guide in all installations.

The writer has been approached several times for information about

value of keeping abreast of the times by reading trade papers. If one is to know the trend of things vital to his own trade he must, of course, read the current trade magazines. Men who have been readers of AMERICAN ARTISAN and have noted the requirements of the Standard Code, previously mentioned, will welcome the time when he is required to conform to it. The same is true of business methods and countless other things to which we are introduced through the excellent trade magazines. It is impossible to know just what advancement is being made unless one does it by reading and attending the conventions, and many of the shop men do not find it convenient to attend the conventions.

Louisville Sheet Metal Contractors Local Entertained by Philip Fink & Sons

*Albert Fink, Host of Evening, Highly
Complimented on Evening's Entertainment*

A BUSINESS meeting, followed by a luncheon and social evening, was held recently by the Louisville, Kentucky, Sheet Metal and Roofing Contractors' Association. At the invitation of Albert Fink the gathering assembled at the offices of Philip Fink & Sons, 951 South Floyd Street.

pearance of a 2-year guarantee to take its place. It was his opinion that this indicates progress for the association.

Ed. Merrick, with whom all sheet metal contractors are acquainted through his good work in the National Association of Sheet Metal Contractors, stated that much good



Louisville Sheet Metal Contractors Enjoying Themselves During Recent Meeting

The principal speaker of the evening was John Hession and the topic of his address was the United Roofing Contractors' meeting in Washington. It was through the efforts of Mr. Hession and his confreres that the next convention of that association will be held in Louisville the third week in January, 1930. Mr. Hession announced that the United Roofing Contractors do not intend to seek assistance from the local association in staging their convention in Louisville.

J. S. Bowling, a guest at the meeting, spoke of the abolition of the 10-year guarantee and the ap-

to every man in the local association would come from the United Roofing Contractors holding their meeting in Louisville next year. He also spoke of the great change in feeling which contractors have for one another now as contrasted with that which obtained 10 or 15 years ago and the part the association has played in bringing this about.

On motion of Mr. Merrick, seconded by Mr. Heck, the association went on record as expressing its willingness to assist the United Roofing Contractors in every possible way to make the Louisville convention successful.

The remainder of the evening was spent in visiting among the contractors.

The regular meeting place for the association is the office of the Sheet Metal Supplies Company, 912 South 12th Street, which is owned and operated by the members of the association.

Ohio Jobbers and Travelers' Auxiliary Officers, Directors and Committees

The officers, board of directors and committees elected and appointed by the Travelers' Auxiliary to the Ohio Sheet Metal Contractors' Association are as follows:

Officers

S. A. Schwarz, President, care S. A. Schwarz Paint & Varnish Co., 1517 E. Boulevard, Cleveland, Ohio.

D. A. Hossler, 1st Vice-President, care J. M. & L. A. Osborn Co., 1541 E. 38th Street, Cleveland, Ohio.

C. E. Waller, 2nd Vice-President, care Wheeling Corrugating Co., Nellie, Ohio.

Lee W. Gillespie, Secretary-Treasurer, care The Ferdinand Dieckmann Co., 1180 Harrison Avenue, Cincinnati, Ohio.

C. T. McGough, Secretary-at-Arms, care Wheeling Corrugating Co., Box 244, Bridgeport, Ohio.

Directors

R. E. Leffler, care W. E. Lamneck Co., 416 Dublin Avenue, Columbus, Ohio.

G. L. Potter, care Premier Warm Air Heater Co., 214 S. Wall Street, Van Wert, Ohio.

R. A. Fraas, care F. O. Schödinger, 322 Mount Vernon Avenue, Columbus, Ohio.

S. E. Kidd, care Columbus Slate Co., Y. M. C. A., Cincinnati, Ohio.

E. W. Norman, care Taunton-New Bedford Copper Co., Mecca Hotel, Cleveland, Ohio.

F. W. Beach, care Lennox Furnace Co., 263 High Street, Warren, Ohio.

Publicity Committee

Miss E. Cohn, care AMERICAN ARTISAN, 620 So. Michigan Avenue, Chicago, Illinois.

E. C. Carter, care Furnaces & Sheet Metals, Chicago, Illinois.

**IN RECOGNITION OF A GREAT AMERICAN
THE MIDLAND FURNACE CO. ANNOUNCES
A NEW PRODUCT**

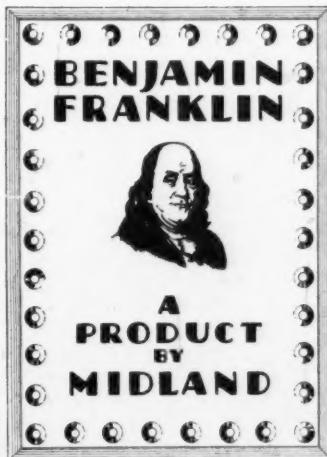
The BENJAMIN FRANKLIN

WHEN silks and satins, velvets and laces were the fashionable clothes for men, Franklin—in a coonskin cap and comfortable homespun—captivated the French people and charmed the favorites of one of the most gorgeous courts of history.

When Washington had been driven out of New York—had lost the Battle of Brandywine—had left Philadelphia to the enemy—had been defeated everywhere—and the resources of the American Colonies were exhausted, Franklin persuaded the French government to lend the Colonies money again and again and then to lend the Colonies the money for the interest. That was diplomacy.

Washington frankly declared that it saved the Revolution from failure.

It marked Franklin as the most successful of American diplomats.



His "Poor Richard's Almanac" for 25 years established Franklin's reputation for shrewdness and wisdom in every country of the world.

Franklin made one of the first pair of spectacles with the lenses both near and far sight.

By flying a kite with a key fastened to the string in storm clouds, Franklin was the first to prove that lightning is electrical discharge.

Franklin invented the lightning rod protection for buildings. Its use was opposed by many as being an impious act to prevent lightning from punishing mankind for their sins.

Franklin was the most renowned scientific investigator of his day. Modern stoves follow the principles of a stove invented by Franklin.

He was the most prominent of the early advocates of fresh air in bedrooms. He was appointed to prepare the plans for ventilating the British Houses of Parliament.

Descended from a family of blacksmiths—starting in his father's shop to be a soap and candle maker—then apprenticed to a printer—Franklin became the greatest of the early American Publishers.

IN Honor and Recognition of this great American, whose name denotes Wisdom, Faith, Science and Thrift, we dedicate and name America's most Economical Steel Furnace, the Benjamin Franklin.

**THE MIDLAND FURNACE CO.
COLUMBUS, OHIO**

WAREHOUSES: MARSHALLTOWN, IOWA



This seal represents the integrity of our products and ourselves.

**NEXT WEEK
ANOTHER TRUE-
STEEL POINT!**

MIDLAND FURNACES

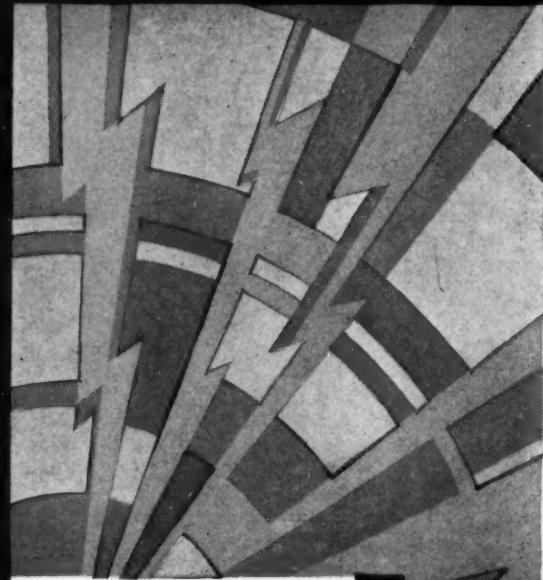
ALL STEEL •••



CLEANER HEAT



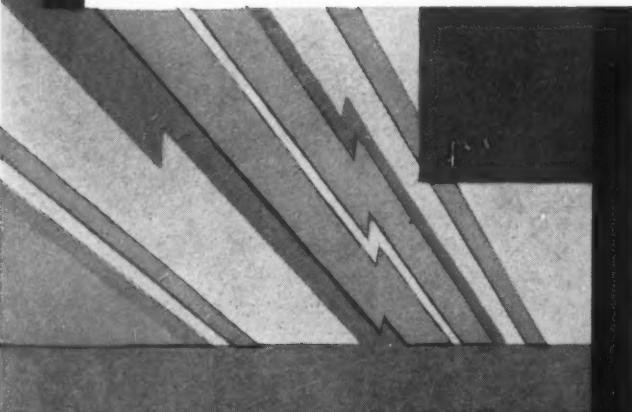
this marks You,
modern!



RICHARDSON

Square Cased Warm Air Heater

SPECIFYING this good looking heater will identify you as a modern installer. And yet you're taking no chances. You know it's the same good old Richardson & Boynton time-tested heater inside. Same economy. Same easy handling. Same conservative ratings. Give 'em what they want in modern beauty—and use your own long experience as to what they *need* in heating ability.



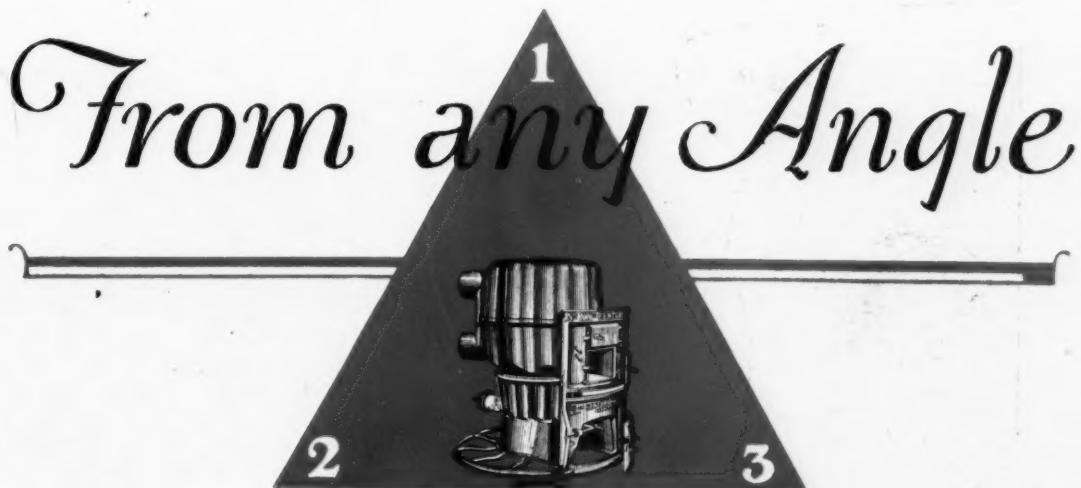
RICHARDSON & BOYNTON CO

*Manufacturers of "Richardson" "Perfect" Heating
and Cooking Apparatus Since 1837*

260 Fifth Avenue New York City

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New York, Utica, Newark, Philadelphia, Boston,
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XXth CENTURY *Is a Desirable Line*

1. DEALER ADVERTISING (supplied free) to interest prospects in your community on XXth Century products. This includes an excellent series of newspaper advertisements, folders, broadsides and letters ready to mail to architects, contractors, real estate men and immediate prospects.

2. A COMPLETE LINE of heating units to sell any class of buyer—XXth Century Hot Blast Cast or Steel Furnaces for quality buyers, Portage Furnaces (XXth Century Built) for price buyers, Room Heaters, Gas Furnaces and Auxiliary Gas Burners, XXth Century Patented Overhead System of Heating—usable only by XXth Century dealers.

3. TIME PAYMENT PLAN makes it easy for your customers to pay for their furnaces once you have sold them. XXth Century takes the work of collections entirely off your hands.

From every angle, XXth Century is a desirable and profitable line. And the beauty of it is—you can concentrate on this complete line—make all your purchases in one place—and make longer and greater profits.

Write for the XXth Century proposition today.

**The XXth Century
H. & V. Company**
Akron, Ohio

"Manufacturers of fine furnaces for 34 years"

THE XXth CENTURY H. & V. CO.
AKRON, OHIO.

Without obligation, please give me the complete XXth Century Dealer Proposition.

Name

Address

A.A. 3-16-29



THATCHER
"METEOR"
FURNACE

ONLY
THE "CELEBRATED
THATCHER TUBULAR"
SURPASSES
THIS WARM AIR
INSTALLATION!

Have you a supply of Thatcher furnace folders displayed in a prominent place in your showroom? If not, write for a supply. FREE!

* * *

Thatcher makes a complete line of warm air heating equipment—even for jobs demanding low installation cost.

HANDSOME profits are willingly paid dealers by home owners specifying Thatcher "Meteor" Furnace. It is a quality heating plant that returns full fuel value in heat! Its satisfactory operation will make "Meteor" owners your staunch boosters and result in additional business. Write for complete information and for dealer proposition if you are not now handling The "Meteor."

THE THATCHER COMPANY

39-41 St. Francis St., Newark, N. J.

New York: 21 West 44th St.

Chicago: 341 No. Clark St.

THATCHER

BOILERS-FURNACES-RANGES

W. P. Cooke, Floral City Heater Company, Dies Following 10-Day Illness

*Was Treasurer of National Warm Air
Heating Association and Director of Bank*

W. M. PINCKNEY COOKE, aged 67 years, secretary-treasurer of the Floral City Heater Company, Monroe, Michigan, and treasurer of the National Warm Air Heating Association, died suddenly at his home at 404 North Macomb Street, Monroe, on Monday of last week. Death was caused by heart disease. Mr. Cooke became ill about ten days ago, but had recovered sufficiently to return to his office.

Mr. Cooke had been connected with the Floral City Heater Company for about 20 years. He was Treasurer of the National Warm Air Heating Association and a director of the First National Bank here, and his interest in the development of the warm air heating industry was of the keenest.

During the World War he was chairman of the Monroe County Liberty Loan drive, chairman of the Red Cross, and captain in the American Protective League, organized by the Department of Justice. He also was a member of the Home Guards.

Mr. Cooke, who retained an interest in the educational opportunities of the city during nearly his whole life, served as secretary of the Monroe Board of Education for nearly 20 years. He was connected with various organizations for community development, and was a member of the committee on factory sites and of the committee on membership of the Monroe Industrial Commission.

An enthusiastic water sportsman, he was active in the Monroe Yacht Club, of which he was a charter member and in which he served as commodore and in other positions. He took part in the planning and conducting of the annual regattas.

Mr. Cooke was a director of the Monroe Rotary Club and of the Monroe Country Club, in which he also occupied executive positions and

was a director of the Monroe Club.

Mr. Cooke was born August 12, 1861, attended St. Mary's grade school and the Monroe public schools, graduating from high school in 1880. He was married to Marie Landon Dansard of Monroe on June 21, 1893.

Three children, Miss Sarah Cooke, student at Radcliffe College, Cambridge, Massachusetts; Mrs. J. Allen Bumpus of Borgess Street, and William Landon Cooke of Noble Avenue, manager of the River Rouge plant of the Consolidated Paper Company, were born to the union. Mrs. Cooke died September 14, 1914.

Mr. Cooke was married to Sarah Tryon of Monroe on July 14, 1921. Besides his widow and three children, three sisters and three brothers survive. They are: Miss Hannah and Miss Mary Cooke, both of Bradford, Vermont; Miss Jane Cooke of Washington, D. C.; John and Arthur Cooke, of Bradford, and Spencer Cooke, of Chicago.

John Rissing, Rissing & Rundell, Fort Wayne, Ind., Dies of Influenza

John Rissing, senior member of the firm of Rissing & Rundell, sheet metal contractors of Fort Wayne, Indiana, died at his home Friday, March 8, following an illness of several weeks of influenza. He was 57 years of age and always active.

Mr. Rissing was a member of the Indiana Sheet Metal and Warm Air Heating Contractors' Association and his firm is a member of the Fort Wayne Furnace & Sheet Metal Contractors' Association. He was a prominent association worker and was very much in evidence at the convention of the Indiana Sheet Metal Contractors' Association held in Indianapolis in January. At that time Mr. Rissing had the honor of

being selected as a District Governor of the association for the Fort Wayne district. He declined the honor with many thanks, however, stating that he was not then in a state of health that would permit him to carry on the work required by that position. The honor then went to William B. Hugenard also of Fort Wayne.

low citizens of Fort Wayne, Indiana, and by members of the Indiana sheet metal and warm air heating fraternity.

Surviving are his widow, Mrs. Anna Rissing; one son, Walter; four daughters, Helen, Florence, Grace and Irene; three sisters, Clara C. Rissing, of Chicago, Mrs. Joseph Ball and Mrs. Cecilia Vodde, of this city.

Use Gasoline and Rosin, Tallow or Palm Oil for Flux

In the issue of AMERICAN ARTISAN for March 2nd, page 15, the Johnson Plumbing and Heating Company, Osage, Iowa, asked for a flux that when used will not leave the parts soldered in a dirty, smeary condition.

Charles Hahn, 5148 Irving Park Boulevard, Chicago, offers the following suggestion to overcome the difficulty: "Take the fire pot outside, set a 6-inch stove pipe over the flame, lay two bars over the pipe, set a pan of gasoline and powdered rosin over it—one fourth rosin three-fourths gasoline—and allow it to dissolve slowly. From this you will get a fine flux like a thin coat of varnish which the heat from the soldering iron will cause to disappear."

* * *

Frank De Weese, furnace inspector for the City of Fort Wayne, Indiana, Department of Building, that city, offers the following for the Johnson Plumbing and Heating Company:

"In reply to the Johnson Plumbing and Heating Company inquiry, appearing in the March 2nd issue of AMERICAN ARTISAN, I want to suggest that they use tallow or palm oil."

Would You Be in Favor of Standardized Symbols for Warm Air Installations?

Do You Think the Adoption of Standardized Symbols Would Save Time?

By F. E. HOCKENSMITH, Heating Engineer, Lennox Furnace Co.

THE installation of warm air furnaces is now on a scientific basis. The activity of the National Warm Air Heating Association has spread the knowledge of the Standard Code from coast to coast.

Furnace installers are figuring their jobs according to the Standard Code. They are talking it in selling their jobs and are making elaborate sketches of their proposed installations, showing warm and cold air runs, in an effort to convince their prospects that they are selling a real scientific heating system.

Practically all furnace manufacturers today have established engineering departments and are advertising free engineering service. Blue prints from these departments are going out into all parts of the country, showing scientifically correct warm air heating installations. Often it happens that blue prints from several different concerns are submitted to the same home owner, the same architect or the same school committee.

Why not standardize on the symbols in the making up of these blue prints? This standardization will work to the benefit of the whole warm air industry. It will simplify the installer's work in following the blue print and will simplify the estimator's work. It will also impress the architect and will make the warm air specialist's proposal more understandable to the buying public.

We are submitting the following group of symbols for your approval and for the purpose of securing constructive criticism. Do you object to them? If so, which ones?

In any event, write the AMERICAN ARTISAN what you think of these symbols and what you think of the policy of standardizing them.

It is Mr. Hockensmith's idea that the adoption of a set of symbols such as is shown in the accompanying illustration would add a great deal of dignity and prestige to the warm air heating industry.

It is not Mr. Hockensmith's idea, however, in presenting the trade with this set of symbols, to have them adopted as they are. He is merely giving them with the article to show what can be done in the way of standardizing the symbols, and to show how much neater appearance a blue print having symbols would make.

His idea is a good one which deserves thorough consideration, and it is hoped that furnace men in all phases of the industry will express themselves as to whether or not they think a movement to have a set of standardized symbols adopted by the industry would bring benefit to the industry. Let's hear what you have to say.

Independent Register Develops Self-Straightening Wall Register

The Independent Register & Manufacturing Company, 3747 East 93rd Street, Cleveland, Ohio, have recently developed a new invention in the form of a self straightening wall register. With this new invention it is possible for the furnace installer, by the simple operation of moving a lug or two, to set a register squarely regardless of which the stack head may tilt. The invention permits the lining up straight of the register face. The face of this self-straightening wall register does not, as usual, screw

direct to fixed lugs on the register frame, but to two movable lugs in the frame.

"These lugs slide sidewise in slots in the frame. Each slot is longer than the lug and permits the lug to come and go $\frac{5}{8}$ of an inch. This makes it possible to tilt the register face either one way or the other with relation to the frame," says the manufacturer.

"Just push the frame into the stack head. Screw the hardened steel sheet metal screws loosely into the lugs. Line up the register face and drive the screws home."

"This new register saves time and trouble, and insures a good looking job always. It is one of the greatest improvements in register manufacture made in recent years. It fills a need that has long existed, and is finding a ready sale everywhere."

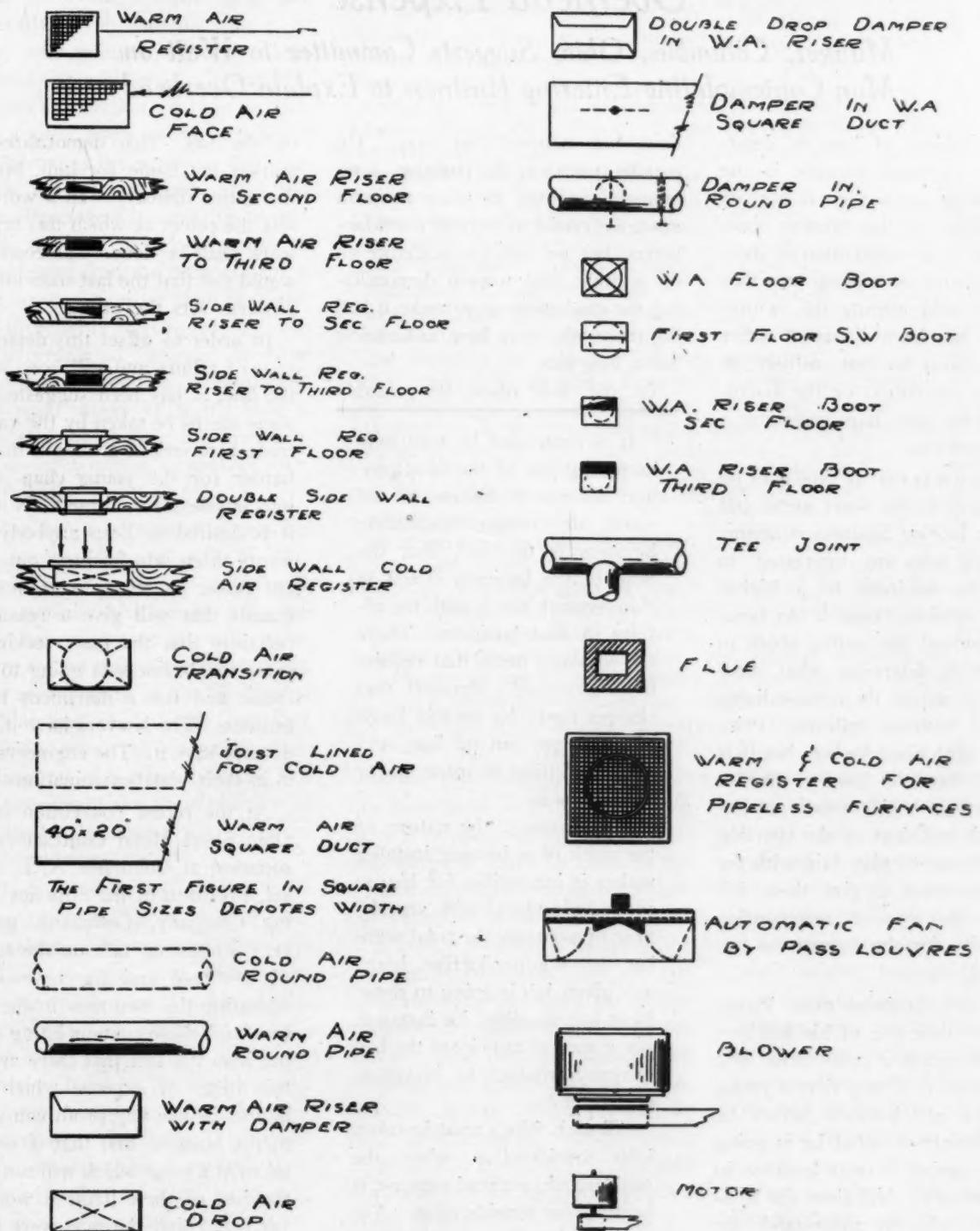
The Independent Register & Manufacturing Company will furnish full information on this new wall register straightener to any furnace installer signifying an interest by writing them.

Water Heater for Warm Air Furnace Eliminates Extra Fuel Cost

The "Alamo" Heater Company, 6143 Wentworth Avenue, Chicago, are the manufacturers of a water heater suitable for installation in the warm air furnace.

The warm air furnace installer is being called upon constantly to provide means for the securing of hot water. In fact, in many instances that is one of the first questions he is asked by the home owner when approached about installing a warm air furnace. The fact that the furnace installer can furnish a water heater that will obviate the necessity of operating a special water

WARM AIR SYMBOLS



Set of Warm Air Heating Symbols Drawn Up by F. E. Hackensmith, Lennox Furnace Co.

heater while the furnace is being operated gives him an added talking point for the furnace.

The Alamo water heaters are easily installed and are so construct-

ed that they cannot get out of order. They insure an adequate, reliable source of hot water without extra fuel cost during the time when the furnace is being operated.

Full information concerning this water heater can be secured from the "Alamo" Heater Company, 6143 Wentworth Avenue, Chicago, Illinois.

Education Only Solution to Problem of Properly Charging Overhead Expense

Munkel, Columbus, Ohio, Suggests Committee to Wait on Man Contemplating Entering Business to Explain Overhead

THE subject of how to determine overhead expense is one that is being given a great deal of consideration at the present time. At almost every convention of sheet metal or warm air heating men that has been held during this winter overhead has been discussed either by a specialist on that subject or from the convention or the assembly, showing that it is becoming a serious problem.

The reason is that as time goes on and failures in the sheet metal and warm air heating business continue, those men who are interested in raising the business to a higher plane of efficiency than it has heretofore enjoyed are casting about in an effort to determine what they can do to avoid the demoralizing effects of business failures. Price fixing is prohibited by law, but if it were not fixed by law, we like to feel that most business men are imbued with sufficient of the sporting spirit to want to play fair with the public; to want to give them full value in the way of merchandise and service for the money the latter spend.

But every business man knows that every time one of his brothers fails in business it costs those who remain money. Every time a young chap goes into business before he fully understands what he is going to be up against it costs business in general money. And since the business men who do understand the proper conduct of business are not going to get benevolent and dig into their own pockets for this additional cost, it must come out of the pockets of the dear public.

The thing would not be so bad if the man going into business that is going to fail failed soon after he entered that business. He would then not have the opportunity to do the damage he does. But the thing

does not happen that way. He usually remains in business long enough not only to place a strain upon the credit of several manufacturers, but he also has a chance to do a great deal toward demoralizing the markets so as to make it bad for those who have been in business for a long time.

In the first place, he probably

It is contended by men who know that one of the most prolific causes of failure in the warm air furnace installation business is the fact that the head of the business is not in close enough touch with the affairs of that business. There are so many items that require to be constantly changed that charges made for certain kinds of work get out of line very easily and must be made up for in some way.

For instance, the nature of the work of a furnace installer makes it impossible for him to judge beforehand with any degree of accuracy the total number of non-productive hours any given job is going to show. How is it possible, for instance, for a man to anticipate the bad chimney troubles he is apt to encounter?

All such things must be taken into consideration when the problem of overhead expense is being given consideration. Yet how few installers do take them into consideration.

does not know his costs. He labors under the misapprehension that he has no overhead to take into account. The consequence is that he takes business at such ridiculously low prices that he can't even meet the ordinary costs of performing the work, let alone realizing a profit

on the job. This demoralizes the market not alone for him, but for the entire industry. In a word, he sets the prices at which this type of work shall be done. The economist would say that the last man into the business sets the prices.

In order to offset this deplorable state of affairs and still keep within the law, it has been suggested that some means be taken by the various trade associations that will make it harder for the young chap to go into business for himself. Not that it is desired to keep anybody who wants to go into business out of it, but rather to set up certain safeguards that will give a reasonable certainty that the man seeking to enter the business is going to be a credit and not a detriment to the business. The lawyers have it. The doctors have it. The engineers have it in their state examinations.

At the recent convention of the Ohio Sheet Metal Contractors' Association at Columbus A. E. Munkel, President of the Superior Heating Company, Columbus, gave a very interesting talk on the subject of overhead and the necessity of educating the men now in the business and those contemplating entering it to the fact that there are certain items of expense which must be met before any profit can accrue to the business and that if work is taken at a price which will not cover the cost of these items it would be far better that the man were not in business at all.

One suggestion which he left with his audience for thought and consideration was that it might be well for the association to have a standing committee whose duty it would be to keep a close vigil upon all entrants into the warm air heating or sheet metal industry. And when it was learned that a young man or any man for that matter has

signified his intention of going into the business to call on that person and find out what his ideas are, what his financial standing is and generally to see that that man is in every way going to be a desirable adjunct to the business. It was Mr. Munkel's idea that perhaps in this way a great many young men could be assisted at the outset so that they would get a good start, or if the committee found it advisable to persuade the said intended entrant to defer going into the business for a year or so, in order that he could be thoroughly grounded in the fundamentals of business or have his financial position strengthened to a point where he would have a chance of weathering the first year or two of business experience successfully.

That is an admirable suggestion and coming from a man of Mr. Munkel's experience no doubt will have considerable weight with the body before whom it was made. There are, of course, certain dangers in an arrangement of this kind, principal among which is the fact that the men given the commission of waiting on the man entering the business might use their position in an unethical manner for purposes of intimidation.

There is no doubt but that such a committee calling on a man contemplating entering the business could do a great deal toward explaining to that man some of the difficulties which are going to confront him and which he will learn sooner or later on his own account and more often than not to his detriment. Therefore if a committee of experienced business men were to call upon him, he should take it as a mark of good will on their part and that their object was to give him the benefit of their experience in the business rather than as an affront or an insult to his intelligence. In this way the committee could point out to him what it is going to cost him to do business and many other items about the business that are not apparent to the man at the time of his entrance. Such a committee would of neces-

Overhead Expense Demonstration Sheet for the Sheet Metal Contractors' Association of Pennsylvania

Gross Business (this means your whole business).....	\$.....
Pay Roll (this means the money paid to those for whose services you made a charge).....	\$.....
Overhead, or Expense of Doing Business.....	\$.....
This means money paid for:	
Rent	\$.....
Insurance—Fire, Liability, Accident, Compensation, etc.....	\$.....
Taxes—Water, City, County, State, United States.....	\$.....
Advertising	\$.....
Printing, Stationery and Postage.....	\$.....
Telephone and Telegraph.....	\$.....
Trade and Daily Papers.....	\$.....
Mercantile Reports	\$.....
Legal Expenses—Attorney Fees, etc.....	\$.....
Collections	\$.....
Dues to Trade Organizations, etc.....	\$.....
Charities and Donations.....	\$.....
Shop Supplies for which no charge is made.....	\$.....
Lost Time of Workmen—Time paid for but not charged.....	\$.....
Bad Debts	\$.....
Allowance—Reduction made to get settlement of accounts.....	\$.....
Depreciation—On Tools and Equipment.....	\$.....
Freight—Where not added to cost of materials.....	\$.....
Car Fare—Where not added to cost of job.....	\$.....
Light—Gas, Electricity, etc.....	\$.....
Power—Gas, Electric, Steam, etc.....	\$.....
Heat—Gas, Coal, etc.....	\$.....
Hauling—Where wagon or truck is owned by establishment this would include all cost of operation, such as driver's wages, feed, repairs.....	\$.....
Salaries—Money paid to those for whose services no charge is made: bookkeepers, clerks, porters, errand boys, managers and owners (where the latter do not work on jobs, money they receive should go in this item)	\$.....

sity have to be very diplomatic, but there is no question but that a great deal of good could be done in the manner suggested without the slightest infraction of the law.

The only solution it seems to the problem is education. So obvious is the necessity for education on this question of making proper charges for overhead that the Sheet Metal Contractors' Association of Pennsylvania, whose convention will be held at Lancaster, Pennsylvania, April 2, 3, and 4, 1929, is devoting considerable time on their program to the problem.

The secretary has already drawn up a sheet which is being mailed out to all members known as the "Overhead Expense Demonstration Sheet" which is to be filled out by the member and brought back to the convention for consideration by the committee. No names are to be signed to the sheets, so that in filling it out the contractor will not be divulging any private business se-

crets, despite the fact that he will be obtaining valuable information designed to show him whether or not his overhead expense is out of line either one way or the other.

Work of this kind is a distinct public benefit, because it helps the contractor to make a success of his business, and where the contractor is successful in the conduct of his business that success is bound to be reflected in the kind of workmanship and materials he gives his customers.

Just to show how serious the Pennsylvania men are taking this work, we are reproducing the demonstration sheet herewith. There are no figures shown, because these are to be filled in by the contractor himself, but a glance over this sheet will help the sheet metal men in other states to determine whether or not they are including all legitimate charges in their overhead account. Study the sheet over. You cannot fail to benefit from it.

RANDOM NOTES AND SKETCHES

We had the pleasure of a visit from Mrs. John O'Conner, whose husband is with the Canton Furnace & Manufacturing Company, Canton, Ohio, on Monday of this week.

* * *

Well, well, so Les Taylor is the first to get cold feet on the golf tournament to be held at Indianapolis during the forthcoming meeting of the National Warm Air Heating Association. Here's the latest dope from Les:

"Once again business raises havoc with pleasure!"

"Tommy Richardson and Art Lamneck have been riding for a fall in this golf game and I planned on leaving for California March 10 to get in some practice so that I can arrive at Indianapolis all ready to go and be of some help to Mr. Jack Stowell, my estimable partner.

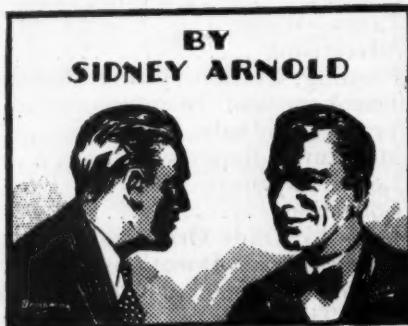
"This morning I received a letter from the Coast asking me to be sure and not be there between the 24th and 30th of March, and that means that I will have to be at this spot the first week in April.

"I am sorry that I cannot defend the Sidney Arnold Loving cup at the April meeting in Indianapolis with Jack Stowell, but if I may I will nominate I. L. Jones to be Jack's partner and bet anything up to \$1 that they retain the championship!"

Doesn't that sound like cold feet to you, Tommy? Of course I'm not insinuating anything.

* * *

Some folks in the sheet metal industry may think that the job of being president of a local sheet metal contractors' association is all honor and glory, but this is contrary to fact, as can be easily proved. Frank J. Merwald, President of the Omaha Sheet Metal Contractors' Association, got himself into con-



BY
SIDNEY ARNOLD

affair that Mr. Merwald held the winning number. Of course it was all a put up job. In the accompanying illustration you see Mr. Merwald astride the beast of burden, and the thing which puzzled him most was what disposition a sheet metal contractor could possibly make of the mule in days when the auto truck is not speedy enough to keep the competitors from getting the jobs. Maybe Frank was getting too many jobs and his competitors wanted to slow him down a little bit.

* * *

E. K. Jones, Vice President of the Northern Oil Burner Company, Minneapolis, Minnesota, was a recent visitor to our office, as was Pete Lorenz of the sales department of the Inland Steel Company, Chicago, and former president of the Illinois Sheet Metal Travelers' Auxiliary.

* * *

Lee Gillespie, Ferdinand Diekman Company, hurried up to the hotel clerk's counter. He had just ten minutes to pay his bill, reach the station and board his train. "Hang it!" he exclaimed, "I've forgotten something. Here, boy, run up to my room—No. 427—and see if I left my pajamas and shaving kit. Hurry! I've only five minutes now."

The boy hurried. In four minutes he returned, empty handed, and out of breath.

"Yes, sir," he panted, "you left them."

* * *

No Wonder They're Appetizing

Miss Mary O'Leary: "What beautiful scallops you have on your pies, Mandy! How do you do it?"

Mandy: "'Tain't no trouble 't all, Miss. Ah jes' uses mah false teeth."



Frank J. Merwald, President Omaha Sheet Metal Contractors' Association



Markets Strong; Support Is Shifting

Freight Car and Auto Needs for Steel at Peak—Spring Buying to Neutralize Losses—Pig Iron Buying Steady—Seek Ore

FEBRUARY'S record of producing more steel per day than any month in history seems destined to stand only until statistics for March are compiled.

Operations have expanded further, to practical capacity, and are now moderately in excess of February's peak.

Continuance of this record gait through March and probably well into April is believed assured. Specifications for finished steel as a whole the past week were the heaviest of the year, for one reason because some producers are standing on March 15 as the deadline for ordering-out first quarter material. Backlogs have not shortened despite exceptional shipments.

Demand for steel from these major outlets, therefore, is at or is passing its maximum. But before the mills begin to experience a real let-down in this direction it seems probable that seasonal spring buying, notably in lines associated with building and farm work, will rise to fill the gaps.

Prospective building, bridge, subway and similar projects have rarely been more attractive at this season, and already makers of wire products detect a stir in farm country buying.

Pig Iron

The pig iron market is stronger at Pittsburgh with producers taking a definite stand for higher prices. Leading interests have advanced their quotations 25 to 50 cents on various grades, and some business has been placed at the new levels.

The Standard Sanitary Mfg. Co. has closed for its second quarter requirements of foundry iron for its Pittsburgh and New Brighton, Pa., plants.

This tonnage was placed at \$17.50, valley, for No. 2 plain and \$18 for No. 2X. Producers have withdrawn these quotations and now are holding to \$18, base, at which level

a few orders of several hundred tons each have been placed.

Furnaces are in a strong position to support a price advance. Several are booked to June 1, and all are well supplied with good backlog through April.

Considerable second quarter business has been booked, but a number of consumers remain to be covered for that period.

The heavy buying of pig iron at Chicago for second quarter noted in recent weeks is being followed by important quiet inquiries for supplemental first quarter needs.

Spot and future orders are being booked at \$20, Chicago furnace, for the base grades.

Continued activity is noted in Birmingham pig iron and steel scrap, with 60 days' delivery stipulated. Heavy melting steel buying is not as active as it has been, so far as the best quality is concerned.

Consumption and production of all nonferrous metals are running higher than ever before. Prices accordingly are strong and delivery periods are being lengthened.

Copper prices were advanced a half cent, delivered Connecticut basis, on Tuesday following publication of the strong statistical report for February. The rise was accompanied by an increase on brass and copper products by the American Brass Co. Brass products were stepped up $\frac{3}{8}$ -cent, copper products $\frac{5}{8}$ -cent, and copper wire and cable a half cent.

Talk of an expected increase in demand and rise in prices were heard in the zinc market on Tuesday after publication of the strongest statistics for any February on record.

Statistics on tin two weeks ago showed that deliveries in the first two months of this year in the United States were larger than ever before. Statistics on lead for February are not yet known but the

unusual strength in the price lately, a rise of $\frac{3}{4}$ -cent so far this year, indicates the way demand is taking up production.

Copper

Stocks of refined copper in the hands of producers at the end of February totaled 55,213 tons compared with 62,749 tons at the end of the preceding month. This cut in stocks was greater than generally expected. Stocks of blister copper also declined sharply.

Shipments of refined copper during the past month set a new record for February both in the total and domestic movements. Output of refined metal was at the daily rate of 5,049 tons, a rate surpassed only once previously.

Domestic buying of copper in the past week has been light, mostly for June shipment. Export business on most days also has been light with sales mostly for May shipment.

Tin

Users have bought moderately of Straits tin in the past week. A fair proportion of the business has been for nearby positions, and some for several months ahead. The market has lacked snap, and has shown a tendency to slump.

Despite the unusual consumption in this country, spot supplies here continue plentiful and world production still seems to be doing better than keeping pace with demand.

Zinc

Prime western continues at 6.35c, East St. Louis. Buying has been of a routine nature, and yet producers say that business is of satisfactory size.

Stocks of slab zinc declined during February to the lowest total for the close of any month since November, 1927. Total output during the past month declined from the aggregate tonnage for the preceding month but domestic shipments increased and established a new February record.

Chicago Warehouse Metal and Furnace Supply Prices

AMERICAN ARTISAN is the only publication containing Western Metal, Furnace Supply and Hardware prices corrected weekly

METALS

PIG IRON

Chicago Fdy.	
No. 2	\$20.00
Southern Fdy. No. 2	
22 51 to 23 01	
Lake Superior Charcoal	27 04
Malleable	20 00

FIRST QUALITY BRIGHT CHARCOAL TIN PLATES

IC	20x28 112 sheets	.325 50
IX	20x28	.25 50
XXX	20x28 56 sheets	.14 50
XXXX	20x28	.15 50
XXXXX	20x28	.17 00

TERNE PLATES

IC	20x28, 40-lb.	112 sheets	\$26 70
IX	20x28, 40-lb.	112 sheets	29 70
IC	20x28, 25-lb.	112 sheets	22 20
IX	20x28, 25-lb.	112 sheets	25 20
IC	20x28, 20-lb.	112 sheets	20 25
IV	20x28, 20-lb.	112 sheets	23 00

"ARMCO" INGOT IRON PLATES

No. 8 ga.—100 lbs.	\$4 15
8/16 in.—100 lbs.	4 05
1/4 in.—100 lbs.	3 85

COKE PLATES

Cokes, 80 lbs., base, 20x28	\$12 00
Cokes, 90 lbs., base, 20x28	12 20
Cokes, 100 lbs., base, 20x28	12 40
Cokes, 107 lbs., base, IC 20x28	12 75
Cokes, 135 lbs., base, IX 20x28	14 75
Cokes, 155 lbs., base, ZX, 56 sheets	8 50
Cokes, 175 lbs., base ZX, 56 sheets	9 85
Cokes, 195 lbs., base ZX, 56 sheets	10 25
Base 10 ga.—per 100 lbs.	\$3 35
"Armco" 10 ga.—per 100 lbs.	4 15

ONE PASS COLD ROLLED BLACK

No. 18-20	per 100 lbs.	\$3 60
No. 22	per 100 lbs.	3 75
No. 24	per 100 lbs.	3 80
No. 26	per 100 lbs.	3 90
No. 27	per 100 lbs.	3 95
No. 28	per 100 lbs.	4 05
No. 29	per 100 lbs.	4 20
No. 30	per 100 lbs.	4 30

"ARMCO" GALVANIZED

"Armco" 24	per 100 lbs.	\$6 15
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GALVANIZED

No. 16	per 100 lbs.	\$4 15
No. 18	per 100 lbs.	4 30
No. 20	per 100 lbs.	4 45
No. 22	per 100 lbs.	4 50
No. 24	per 100 lbs.	4 65
No. 26	per 100 lbs.	4 90
No. 27	per 100 lbs.	5 00
No. 28	per 100 lbs.	5 15
No. 30	per 100 lbs.	5 55

BAR SOLDER

Warranted 50x50	per 100 lbs.	\$31 00
Commercial 45-55	per 100 lbs.	28 50
Plumbers	per 100 lbs.	26 00

ZINC

In Slabs		\$ 7 25
SHEET ZINC		
Cask Lots (600 lbs.)		\$11 25
Sheet Lots		12 25

BRASS

Sheets, Chicago base		.25 1/4 c
Mill base		.24 1/4 c
Tubing, brazed base		.32 1/4 c
Wire, mill base		.24 1/4 c
Rods, mill base		.21 1/4 c

COPPER

Sheets, Chicago base		.29 1/4 c
Mill base		.28 1/4 c
Tubing, seamless base		.31 c
Wire, plain rd., 8 B. & S. Ga.		
and heavier		.26 1/4 c

LEAD

American Pig		.37 50
Bar		.35 00

TIN

Pig Tin	per 100 lbs.	\$54 00
Bar Tin	per 100 lbs.	55 00

HARDWARE, SHEET METAL SUPPLIES, WARM AIR FURNACE FITTINGS AND ACCESSORIES.

ASBESTOS

Paper up to 1/16"	6c per lb.
Roll board	.64c per lb.
Mill board 3/32 to 1/4"	.6c per lb.
Corrugated Paper (250 sq. ft. to roll)	\$6 00 per roll

BRUSHES

Furnace Pipe Cleaning	Bristle with handle each	\$0 75
Flue Cleaning	Steel only, each	1 25

CEMENT, FURNACE

American Seal, 5-lb. cans, net	\$.45
American Seal, 10-lb. cans, net	.85
American Seal, 25-lb. cans, net	2 .25
Pecora	per 100 lbs. 7 50

CHIMNEY TOPS

Adams' Revolving	Wt. Doz.	Price Doz.
	4 in.	21 lbs. \$11 00
	6 in.	24 lbs. 11 50
	7 in.	30 lbs. 13 50
	8 in.	33 lbs. 15 00
	9 in.	51 lbs. 16 50
	10 in.	56 lbs. 18 00
	12 in.	66 lbs. 22 00
	14 in.	110 lbs. 36 00

CLINKER TONGS

Each		\$1 50
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CLIPS

Damper	No-Rivet Steel, with tail
	pieces, per gross....\$9 50
	Rivet Steel, with tail
	pieces, per gross....7 50
	Tail pieces, per gross....2 40

COPPERS—Soldering Pointed Roofing

3 lb. and heavier	per lb. 40c
	per lb. 45c
2 1/2 lb.	per lb. 48c
2 lb.	per lb. 55c
1 1/2 lb.	per lb. 60c

CORNICE BRAKES

Chicago Steel Bending	Nos. 1 to 6B	Net
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CUT-OFFS

Gal., plain, round or cor. rd.	
26 Gauge	30%
28 Gauge	35%

DAMPERS

"Yankee" Hot Air	
7 inch, each 20c, doz.	\$1 60
8 inch, each 25c, doz.	2 20
9 inch, each 30c, doz.	2 60
10 inch, each 32c, doz.	2 80

ADJUSTABLE—Uniform Blue

5-inch	
6-inch	1 25
7-inch	1 75

Special Corrugated

6-inch	\$1 00
7-inch	1 60

Adjustable—Uniform Blue

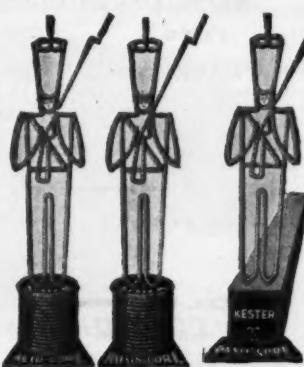
"Milcor" No. 28 Gauge. Uniform	
Blue.	
5-inch	\$1 60
6-inch	1 75
7-inch	2 10

WOOD FACES—60% off list

ADAMS NO. 1 CHECK

Check and Collar Complete	
8 inch, each	2 00
9 inch, each	2 25
End Check Only	
8 inch, each	

For Any
Metal Work
the
KESTER
Corps
is Ready



TOO bad, but true . . . that parts to be soldered are not always new. But what difference is that to a KESTER Flux-core Solder? None at all! That is when the KESTER Corps of Flux-core Solders is best. The flux, contained within the solder itself, flows out just before the solder melts. And that's why the combination of flux and solder is ideal. Merely "a touch of heat and the job is done." Write for full information about KESTER SOLDERS with any of the following fluxes: Acid, Rosin and Paste.

Established 1899

CHICAGO SOLDER CO., 4241 Wrightwood Ave., Chicago

KESTER Self-fluxing **SOLDER**

MASHALLTOWN

Rotary Throatless Shears

ONLY three moving Parts—takes sheets of unlimited width and up to $\frac{1}{2}$ inch gauge. Cuts curves in any direction—straight—circular or any irregular shape desired. Easy to operate—hand or power—nothing to get out of order—a speedy worker and the shear keeps sharp even after months of hard use.



MARSHALLTOWN MANUFACTURING CO.
MARSHALLTOWN, IOWA

Round
Corrugated



Plain Round



NEVER MADE WITHOUT THIS

TRADE F. Dieckmann MARK

Quality and Service Made 'em Famous

Made of one piece of heavy gauge material, in all styles and angles from 10 to 90 degrees, of 24, 26, 28 ga. ternes, then galvanized after formation.

DIECKMANN
Elbows and Shoes
*are the standard of the market
and always give satisfaction*

Send for new catalogue 26 showing complete line

The Ferdinand Dieckmann Co.
P. O. Station B, Cincinnati, O.

Square
Corrugated
Style A



Square
Corrugated
Style B

Not made lighter than
28 ga. or 16 oz. copper

ADVERTISERS' INDEX

The dash (—) indicates that the advertisement runs on a regular schedule but does not appear in this issue.

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Kernchen Co.	Wheeling Corr. Co.
Kirk-Latty Co.	Wise Furnace Co.

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PASTE

Asbestos Dry Paste:	
200-lb. barrel	\$14.00
100-lb. barrel	7.00
50-lb. pail	4.25
10-lb. bag	1.00
5-lb. bag	.55
2½-lb. cartons	.25

RIDGE ROLL

Galv., Plain Ridge Roll, b'dld	75-15-5%
Galv., Plain Ridge Roll, crated	75-15%

POKERS, FURNACE

Each	\$0.75
------	--------

POKERS, STOVE

Nickel Plated, coil handles, per doz.	1.10
Wr't Steel, str't or bent, per doz.	\$0.75

PIPE

Conductor	Cor. Rd., Plain Rd., or Sq.
-----------	-----------------------------

Galvanized

Crated and nested (all gauges)	75-7½%
Crated and not nested (all gauges)	75-2½%

Furnace Pipe

Double Wall Pipe and Fittings	60%
Single Wall Pipe, Round Galvanized and Tin Fittings	60%
Galvanized and Tin Fittings	60%

Lead

Per 100 lbs.	\$12.50
--------------	---------

Stove Pipe

"Milcor" "Titelock" Uniform Blue Stove	
28 gauge, 5 inch U. C. nested	11.00
28 gauge, 6 inch U. C. nested	12.00
28 gauge, 7 inch U. C. nested	14.00
30 gauge, 5 inch U. C. nested	10.25
30 gauge, 6 inch U. C. nested	11.00
30 gauge, 7 inch U. C. nested	13.00

T-Joint Made up

6-inch, 28 ga....per 40 ft. \$3.40
All sizes 60%

PULLEYS

Furnace Tackle....per doz.	\$0.85
Furnace Screw (enameled).....per doz.	8.50
.....per doz.	75

SHOES

Galv. 28 Gauge, Plain or corrugated round flat crimp	60%
26 gauge round flat crimp	45%
24 gauge round flat crimp	15%

SNIPS, TINNERS

Clover Leaf	40 & 10%
National	40 & 10%
Star	50%
Milcor	Net

SQUARES

Steel and Iron	Net
(Add for bluing \$3 per doz. net)	
Mitre	Net

PUTTY

Commercial Putty, 100-lb. Kits	\$3.50
Malleable Iron Damper.....10%	

REDUCERS—Oval Stove Pipe

Per Doz. 7—6, 28-gauge, 1 doz. in carton	\$2.00
--	--------

REGISTERS AND BORDERS

Baseboard, Floor and Wall	
Cast Iron	20%
Steel and Semi-Steel	33½%
Baseboard, 1 piece	33½-20%
Baseboard, 2 piece	33½%
Wall	33½%
Adjustable Ceiling Ventilators	33½%

STOPPERS, FLUE

Common	per doz. \$1.10
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Gem, No. 1	per doz. 1.10
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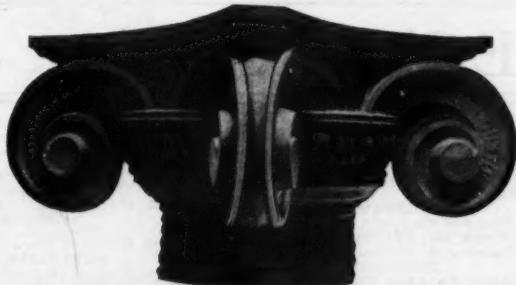
Gem, flat, No. 3	per doz. 1.00
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VENTILATORS

Standard	30 to 40%
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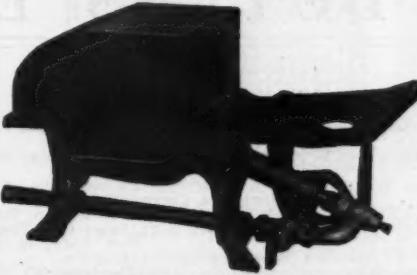
WIRE

Black annealed wire, No. 9, per 100 lbs.	\$3.20
Galvanized Barb wire, per 100 lbs.	3.90
Cattle Wire—galvanized catch weight spool, per 100 lbs.	3.20
Galvanized Plain Wire, No. 9, per 100 lbs.	3.25



GEROCK BROS. MFG. CO.
SHEET METAL ORNAMENTS
 AND STATUARY
 1252 So. Vandeventer Ave., St. Louis, Mo., U.S.A.
Write for Catalogue

THERMO GAS SOLDER FURNACE



**EFFICIENT
ECONOMICAL
RELIABLE**

Furnished in four sizes: single and double, automatic, or non-automatic.

WRITE FOR SPECIAL OFFER DURING MARCH
MAPLEWOOD MACHINERY COMPANY
 2634-36-38 FULLERTON AVE. CHICAGO, ILL.

BOLTS

We manufacture a complete line of bolt products, including stove bolts, carriage bolts, machine bolts, lag bolts, nuts, copper pins, etc. Also stove rods, small rivets and hinge pins. Catalog on request.

THE LAMSON & SESSIONS CO.
THE KIRK-LATTY CO.
 1971 W. 85th St. Cleveland, O.

The NEW IMPROVED "STANDARD"

Rotable Ventilator
Now made of Armco Iron
 This favorite cone-shaped ventilator is now improved in several important points.
 The weight of the ventilator body is now carried on a concave thrust bearing nested in the apex of the conical body. This bearing turns upon the pivot point of the stationary center spindle.
 The bronze Guide Bushings are now made of non-corrosive bronze which minimizes friction and any tendency to screech when body is rotating.
There are other new features. Write today for new catalog and price list.

STANDARD VENTILATOR CO., Lewisburg, Pa.

TREADLE SHEAR

This TREADLE GAP SHEAR is made in all standard sizes for No. 14 and lighter gauge sheets. With it, sheets can be squared, trimmed or slit.
 We make a complete line of shears, punches and bending rolls, all sizes for hand or belt drive. Write for Catalog "S."

BERTSCH & COMPANY Cambridge City, Ind.

Torrid

Genuine Tinners Fire Pots

bearing the trade name "Torrid" are made by Diener. None others are genuine. Be sure the Furnace you buy has our name on the tank.

GEO. W. DIENER MFG. CO., CHICAGO
Makers of fine Blow Torches and Fire Pots.

IF there is a tool or machine that you need and you don't know where to get it—

Write to the

Notes and Queries Dept.

of

AMERICAN ARTISAN

RYERSON SHEETS

IMMEDIATE SHIPMENT FROM STOCK

More than twenty kinds of Prime quality sheets are carried in stock. There is a special sheet for every purpose. Also Bars, Angles, Rivets, Bolts, Tools and Metal-Working Machinery. *Write for Journal and Stock List.*

JOSEPH T. RYERSON & SON Inc.
 Chicago Milwaukee Jersey City Boston Detroit St. Louis Cincinnati Cleveland Buffalo

VIKING SHEAR

Compound LEVER Handle—Removable Blades

A child can work them

VIKING SHEAR CO., Erie, Pa.



Send for catalog today

When writing mention AMERICAN ARTISAN—Thank you!

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Asbestos Liquid.	Eaves Trough.	Heaters—School Room.
B. & F. Mfg. Co., Des Moines, Ia. Acetylene (Gas) Dissolved.	Barnes Metal Products Co., Chicago, Ill.	Floral City Heater Co., Monroe, Mich.
Prest-O-Lite Co., Inc., New York, N. Y.	Berger Bros. Co., Philadelphia, Pa.	Meyer Furnace Co., The, Peoria, Ill.
Benches—Steel	Lupton's Sons Co., David.	L. J. Mueller Furnace Co., Milwaukee, Wis.
Maplewood Machinery Co., Chicago, Ill.	Milwaukee Corrugating Co., Mill, Ch'go, La Crosse, Kan. City	Waterman-Waterbury Co., Minneapolis, Minn.
Bolts—Stove.	New Jersey Zinc Sales Co., The, New York, N. Y.	
The Kirk-Latty Co., Cleveland, Ohio	Wheeling Corrugating Co., Wheeling, W. Va.	
Lamson & Sessions Co., Cleveland, Ohio		
Ryerson & Son, Inc., Jos. T., Chgo., N. Y., St. L. Det., Cleve.		
Brakes—Bending.		
Dreis & Krump Mfg. Co., Chicago, Ill.		
Ryerson & Son, Inc., Jos. T., Chgo., N. Y., St. L. Det., Cleve.		
Brakes—Cornices.		
Dreis & Krump Mfg. Co., Chicago, Ill.		
Brass and Copper.		
American Brass Co., Waterbury, Conn.		
Copper & Brass Research Association, New York		
Cans—Garbage.		
Osborn Co., The J. M. & L. A., Cleveland, Ohio		
Castings—Malleable.		
Fanner Mfg. Co., Cleveland, Ohio		
Ceilings—Metal.		
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Chimney Tops.		
Standard Ventilator Co., Lewisburg, Pa.		
Clinker Tong.		
L. J. Mueller Furnace Co., Milwaukee, Wis.		
Stover Mfg. & Engine Co., Freeport, Ill.		
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Cornices.		
Friedley-Voshardt Co., Chicago, Ill.		
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Cutting Blowpipes.		
Oxwell Acetylene Co., New York, N. Y.		
Cut-offs—Rain Water.		
Milwaukee Corrugating Co., Mill, Ch'go, La Crosse, Kan. City		
Dampers—Quadrants—Accessories.		
Milwaukee Corrugating Co., Mill, Ch'go, La Crosse, Kan. City		
L. J. Mueller Furnace Co., Milwaukee, Wis.		
Parker-Kalon Corp., New York, N. Y.		
Stover Mfg. & Engine Co., Freeport, Ill.		
Damper Regulators.		
National Regulator Co., Chicago, Ill.		
H. M. Sheer Co., Quincy, Ill.		
Thermo-Control Regulator Co., Youngstown, Ohio		
Dies—Punch & Press.		
La Salle Machine Works, Chicago, Ill.		
Diffuser—Air Duct.		
Aeolus-Dickinson Co., Chicago, Ill.		
L. J. Mueller Furnace Co., Milwaukee, Wis.		
Doors—Metal.		
Lupton's Sons Co., David, Philadelphia, Pa.		
Drive Screws—Hardened Metallic.		
Parker-Kalon Corp., 200 Varick St., New York		
Eaves Trough.		
Barnes Metal Products Co., Chicago, Ill.		
Berger Bros. Co., Philadelphia, Pa.		
Lupton's Sons Co., David.		
Milwaukee Corrugating Co., Mill, Ch'go, La Crosse, Kan. City		
New Jersey Zinc Sales Co., The, New York, N. Y.		
Wheeling Corrugating Co., Wheeling, W. Va.		
Fittings—Conductor.		
Barnes Metal Products Co., Chicago, Ill.		
Milwaukee Corrugating Co., Mill, Ch'go, La Crosse, Kan. City		
Fittings—Elbow.		
Barnes Metal Products Co., Chicago, Ill.		
Milwaukee Corrugating Co., Mill, Ch'go, La Crosse, Kan. City		
Fittings—Flange.		
Chicago Metal Mfg. Co., Chicago, Ill.		
Fittings—Fitting.		
Chicago Metal Mfg. Co., Chicago, Ill.		
Fittings—Steel Pipe.		
Chicago Metal Mfg. Co., Chicago, Ill.		
Furnace Cement—Asbestos.		
Connors Paint Mfg. Co., Wm., Troy, N. Y.		
Milwaukee Corrugating Co., Mill, Ch'go, La Crosse, Kan. City		
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Technical Products Co., Pittsburgh, Pa.		
Furnace Cleaners—Suction.		
Brillion Furnace Co., Brillion, Wis.		
Furnace Coloring (Enamel).		
B & F Mfg. Co., Des Moines, Iowa		
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A-C Mfg. Co., Pontiac, Ill.		
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A. H. Robinson Co., Massillon, Ohio		
Warm Air Furnace Fan Co., The, Cincinnati, Ohio		
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H. M. Sheer Co., Quincy, Ill.		
Thermo-Control Regulator Co., Youngstown, Ohio		
Furnace Rings.		
Forest City-Walworth Run Foundries Co., Cleveland, Ohio		
Milwaukee Corrugating Co., Milwaukee, Wis.		
Furnaces—Gas.		
Calkins & Pearce, Columbus, Ohio		
Mueller Furnace Co., L. J., Milwaukee, Wis.		
Furnaces—Warm Air		
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American Furnace Co., St. Louis, Mo.		
Beckwith Co., The, Dowagiac, Mich.		
Brillion Furnace Co., Brillion, Wis.		
Canton Furnace & Mfg. Co., Canton, Ohio		
Colburn Heater Co., Chicago, Ill.		
Emrich Co., C., Columbus, Ohio		
Farris Furnace Co., Springfield, Ill.		
Floral City Heater Co., Monroe, Mich.		
Forest City-Walworth Run Fdy., Cleveland, Ohio		
Fox Furnace Co., Elyria, Ohio		
Heaters—Cabinet.		
Fox Furnace Co., Elyria, Ohio		
Mueller Furnace Co., L. J., Milwaukee, Wis.		
Waterman-Waterbury Co., Minneapolis, Minn.		
Heaters—School Room.		
Henry Furnace & Fdy. Co., Cleveland, Ohio		
Hess-Snyder Co., Massillon, Ohio		
Homer Furnace Co., Coldwater, Mich.		
Lennox Furnace Co., Marshalltown, Ia.; Syracuse, N. Y.		
Magir Foundry & Furnace Co., P. H., Bloomington, Ill.		
May-Fiebeger Furnace Co., Newark, Ohio		
Marshall Furnace Co., Marshall, Mich.		
Meyer Furnace Co., The, Peoria, Ill.		
Midland Furnace Co., Columbus, Ohio		
Mt. Vernon Furnace & Mfg. Co., Mt. Vernon, Ill.		
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Premier Warm Air Heater Co., Dowagiac, Mich.		
Richardson & Boynton Co., New York, N. Y.		
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Ornaments—Sheet Metal.		
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Grock Bros. Mfg. Co., St. Louis, Mo.		
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Linde Air Products Co., New York, N. Y.		
Paint.		
Connors Paint Mfg. Co., Wm., Troy, N. Y.		
Patterns—Furnace and Stove.		
Cleveland Castings Pattern Co., Cleveland, Ohio		
Quincy Pattern Co., Quincy, Ill.		
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Milwaukee Corrugating Co., Mill, Ch'go, La Crosse, Kan. City		
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Mueller Furnace Co., L. J., Milwaukee, Wis.		
Waterman-Waterbury Co., Minneapolis, Minn.		
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Mt. Vernon Furnace & Mfg. Co., Mt. Vernon, Ill.		
Mueller Furnace Co., L. J., Milwaukee, Wis.		
Premier Warm Air Heater Co., Dowagiac, Mich.		
Richardson & Boynton Co., New York, N. Y.		
Robinson Co., A. H., Massillon, Ohio		
Rybolt Heater Co., Ashland, Ohio		
Rybowl & Sons Co., R. J., Milwaukee, Wis.		
Success Heater Mfg. Co., Des Moines, Ia.		
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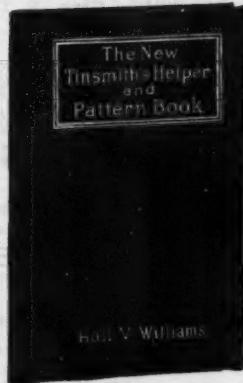
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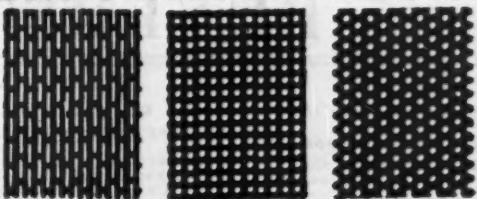
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Wanted—First class furnace and sheet metal worker that can read blue prints and lay out jobs. State wages. Located in northern Illinois. Address S-493, AMERICAN ARTISAN, 620 So. Michigan Ave., Chicago, Ill.

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Wanted—Experienced man to sell warm air heating installations. Good opportunity for one who understands the business. Address Sheet Metal Shop, 3807 Sixth Avenue, Des Moines, Iowa. A-495

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PATENTS
HUBERT E. PECK
Patent Attorney
Barrister Bldg., WASHINGTON, D. C.

WANTED

Experienced furnace salesman for the State of Iowa. Write, stating experience, salary, and references. Address D495, American Artisan, 620 So. Michigan Ave., Chicago, Illinois.

SALESMAN

Experienced furnace salesman for Southern Illinois and Indiana residing in or near Indianapolis. Write, stating experience, salary and references. Address E495, American Artisan, 620 So. Michigan Ave., Chicago, Ill.

**AMERICAN ARTISAN
ADS BRING RESULTS****SPECIAL NOTICE****WANTED**
An Assistant Salesmanager

a man capable of intelligently handling a vast amount of correspondence. Must write good clean sales letters and work with a large force of salesmen. Must understand warm air heating. Address the Midland Furnace Company, Box 217, Station A, Columbus, Ohio.

F-495



"You see I have to do things big, judging by the size of my family," writes a student on the back of a Kodak picture similar to the above.. He adds: "Nothing small about me. I got through being a cheap mechanic when I took your course, and my business has grown wonderfully since, and I feel I really owe it to the St. Louis Technical Institute."

BIG BUSINESS SAYS: PREPARE FOR TOMORROW'S OPPORTUNITY!

Harken to this Command, O Ye Shop Owners, Salesmen, Mechanics, etc. Fortunes will be made in these next few years by those who KNOW. Devote this Winter to mastering a Technical Education so later you can go after the bigger paying Jobs—the ones with steady work—that make for the longer yearly income. You can make this your personal Victory by qualifying yourself to Read Plans, Laying Out, Estimating and Managing the bigger paying jobs.

Yes, Sir, we train you in your own Home, Personal, Clear, Direct

Check your course. Write today before you forget it

- SHEET METAL DESIGN AND PATTERN DRAFTING
- SPECIAL WARM AIR FURNACE HEATING
- SHEET METAL CONTRACTING & ESTIMATING
- FAN HEATING VENTILATING ENGINEERING

THE ST. LOUIS TECHNICAL INSTITUTE, O. W. KOTHE, Pres. 4543 Clayton Ave., St. Louis, Mo.

Expressly designed for
use in brick, mortar,
concrete, etc.



Hammer this Nail into Masonry like an ordinary nail into wood!

WHEN you have cornices and flashings to fasten down—gutters and leaders to hang and other things to fasten to masonry—take Parker-Kalon Hardened Masonry Nails on the job. With these Nails you can make fastenings to brick, mortar, concrete, etc., the easiest possible way.

Simply hammer in a Hardened Masonry Nail the same as you drive a common nail into wood. As the Nail goes in, the hardened spiral ribs cut and twist their way into the masonry, making a secure fastening in a fraction of the time required for expansion bolts, hooks or

anchors. Even in concrete, you need only drill a small hole to start this Nail.

Sheet metal workers everywhere are using Parker-Kalon Hardened Masonry Nails to make fastenings to masonry with the least time and labor.

Try these Nails on your own jobs—the coupon brings samples for a trial.

Hardened Masonry Nails are made in three sizes: $3/16" \times 1"$, $1/4" \times 1\frac{1}{2}"$, $1/4" \times 2"$.

PARKER-KALON CORPORATION
190 Varick Street New York, N. Y.

Distributed in Canada by
Aikenhead Hardware Ltd., 19-21 Temperance St., Toronto

←
Parker-Kalon
Hardened
Masonry Nails

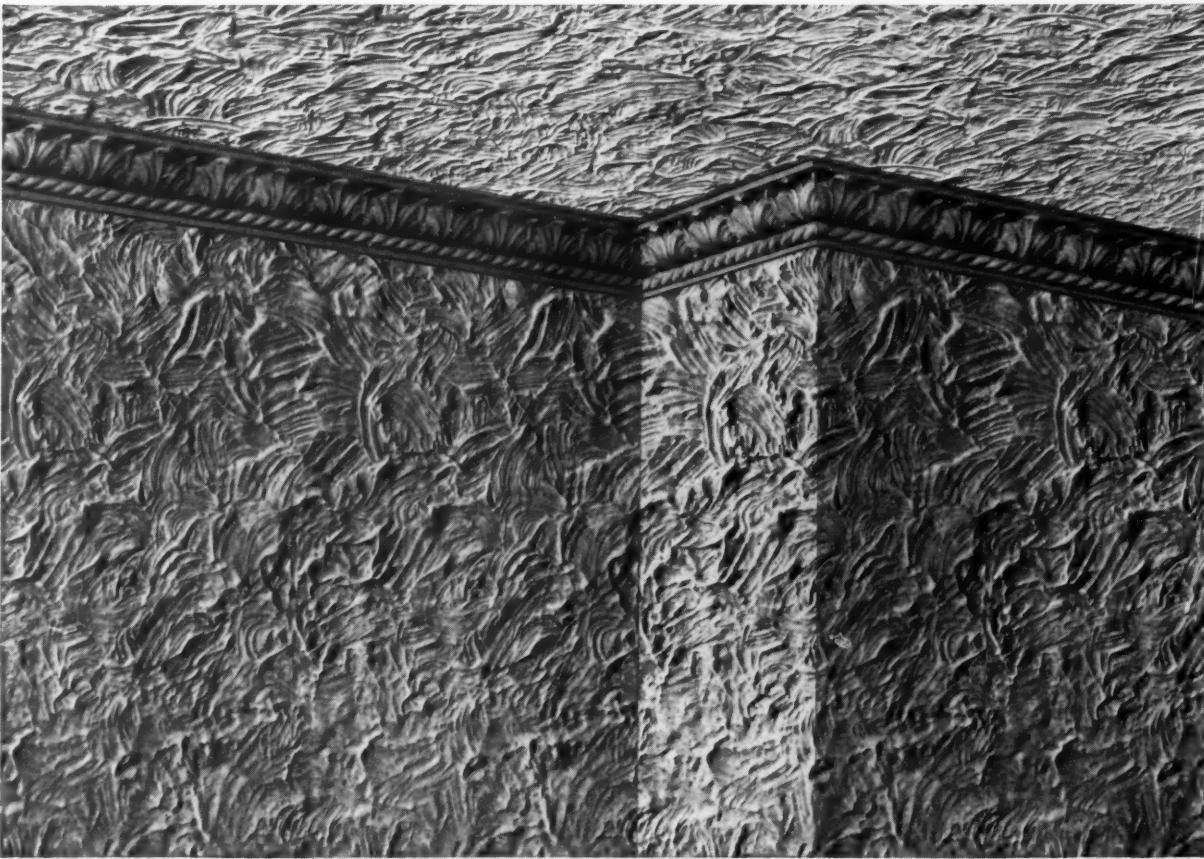
PATENTED
FEB. 26, 1924—No. 1486202

Parker-Kalon Corporation
190 Varick St., New York, N. Y.
Please send me a handful of Hardened Masonry
Nails. I want to try them out for

Name

Address

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Walls and Ceilings of This New Spanish Texture Design Are Appropriate ~

**for New Stores — New Halls — New Schools — New Churches
for Old Buildings That Progress and Good Rentals Demand
Bringing Up-to-Date**

HERE is a decidedly new idea in metal ceiling and wall design—something never before attempted.

Milcor has perfected a Spanish Texture pattern that reproduces almost exactly the attractiveness of an expert plastering job at a far lower cost.

Like all other Milcor metal ceilings and walls, it is easy to erect. And the design suggests for decoration a splattering of color on an old-ivory base that is exceedingly attractive.

You can sell this Spanish Texture design for either new or old buildings and give the owner a job that will be far more decorative than could be had at a like cost in any other way. Stores, restaurants, halls, theatres, churches—any public or semi-public building or room are prospects for Milcor Spanish Texture Wall and Ceiling design.

Send us a blue print or layout of any room and we will give you lump sum quotations for required quantities of Spanish Texture Wall or Ceiling to cover.

MILWAUKEE CORRUGATING COMPANY, Milwaukee, Wis.

Eastern Plant: ELLER MFG. CO., CANTON, OHIO

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MILCOR METAL Walls & Ceilings

